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**THE
SEXUAL DISABILITIES OF MAN**

"Qu'a faict l'action genitale aux hommes, si naturelle, si necessaire et si iusta, pour n'en oser parler sans vergogne, et pour l'exclure des propos serieux et reglez? Nous prononceons hardiement, tuer desrobber, trahir; et cela, nous n'oserions qu'entre les dents."

MONTAIGNE.

THE SEXUAL DISABILITIES OF MAN

AND
THEIR TREATMENT

BY
ARTHUR COOPER,

CONSULTING SURGEON TO THE WESTMINSTER GENERAL
DISPENSARY; FORMERLY HOUSE SURGEON TO THE
MALE LOCK HOSPITAL, LONDON.

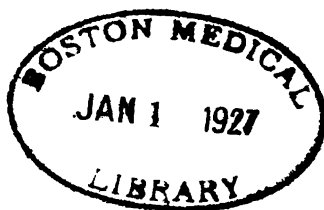
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PREFACE TO THE FIRST EDITION.

MANY years ago the writer published, with notes and additions, a translation of a short monograph on Sterility and Impotence by the late Professor Ultzmann, of Vienna, which has long been out of print.

The present little book is based mainly on what has been observed in practice during the last thirty years, and it is hardly necessary to say that it does not pretend to be exhaustive. But perhaps it may be of some use to the student who becomes a practitioner with little knowledge of matters which receive but scanty recognition in the medical schools of this country.

July, 1908.

PREFACE TO THE SECOND EDITION.

WITH the object of making this new edition less imperfect than the first, and in the hope also of making it more serviceable to the reader, the text has been revised and new matter, less or more, has been added to most of the chapters.

A. C.

20 Old Burlington Street,
London, W.

July, 1910.

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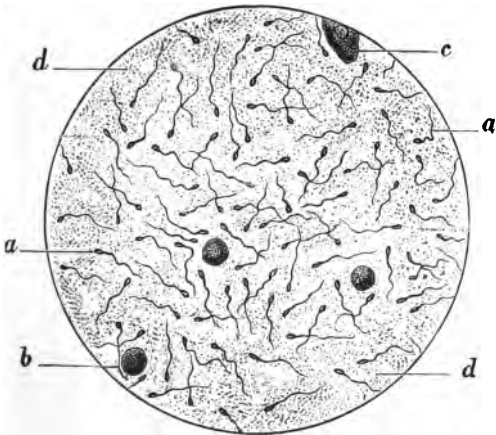
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FIG. 1.

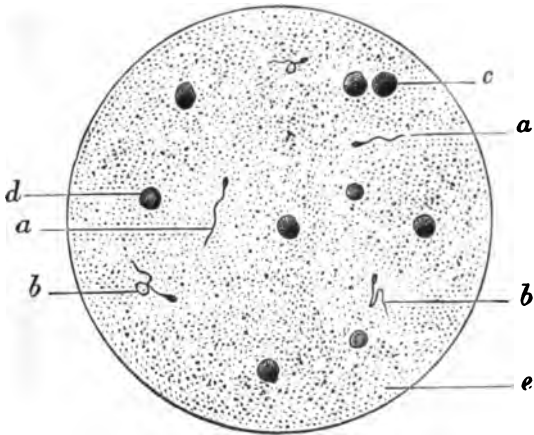


Normal Semen $\times 300$.

a. Living Zoosperms. *b.* Seminal Cells. *c.* Epithelium.
d. Seminal Granules.

(After ULTMANN.)

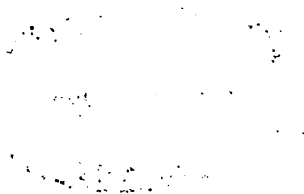
FIG. 2.

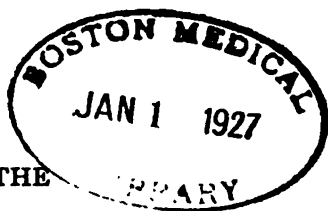


Abnormal Semen $\times 300$.

a. Living Zoosperms. *b.* Dead Zoosperms. *c.* Pus-corpuscles.
d. Blood-corpuscles. *e.* Seminal Granules.

(After ULTMANN.)





SEXUAL DISABILITIES OF MAN.

INTRODUCTION.

THE chief sexual disabilities of civilised man may be broadly divided into :—

1. Those depending on some defect in the seminal fluid or on some condition which prevents its proper discharge—causing Sterility.

2. Those depending on some defect in the apparatus concerned in the act of copulation—causing Impotence.

They may be present together or separately.

As regards male sterility, it is only in recent times that much attention has been

paid to it, and even now, in this country at any rate, it does not receive the notice it deserves, notwithstanding its importance to the individual and the family, as well as its influence on the birth-rate of the general population.

The proportion of barren marriages in which the husband is at fault has been variously estimated by different observers as from 10 to 25 per cent., and by some even higher still.

Matthews Duncan called attention to the matter in the Goulstonian Lectures in 1883, and again in 1889 he wrote: "Enlarged experience and inquiry make me more and more convinced of the greatness of the part played by the male. . . . It is a good rule to subject a woman to no prolonged, painful, or dangerous treatment for sterility, unless assured of the potency of the male as regards

connexion and as regards the semen." But even now this good rule is not always observed in practice, and it still happens sometimes that, unless the husband is clearly incompetent as regards copulative power, the fault is attributed to the wife, and only when the gynecologist has failed is the husband suspected and submitted to examination.

Impotence, on the other hand, has been from time immemorial a matter of anxiety to a vast number of mankind, so that whilst it is quite common for medical advice to be sought respecting the copulative power, it seems to be comparatively rare for a man before marriage to have any sort of doubt or anxiety respecting his procreative power. And this in spite of the fact that it has long been known that a man may be able to perform the sexual act to his own complete

satisfaction, and yet may be quite incapable of begetting children.

In the following pages an attempt will be made to consider these and some allied conditions, not as special entities to be dealt with always in some special way, but as phenomena to be investigated and traced to their source like other morbid phenomena, and therefore as a branch of the art of medicine which ought to be studied and taught in the ordinary medical curriculum.

STERILITY.

CHAPTER I.

THE SEMEN.

As the semen plays such an important part in determining the question of Fertility or Sterility, it is necessary to begin by briefly describing it.

The normal semen of a healthy man as it leaves the urethra is a complex fluid made up of the secretions of the testes, vasa deferentia, seminal vesicles, prostate, Cowper's glands, and the smaller mucous glands of the urethra.

The seminal fluid is viscid, neutral or alkaline in reaction, and in appearance and

consistency resembles a decoction of starch. It has an odour which has been compared with various other odours, but which is really peculiar to itself and needs no description.

According to Landois, normal semen contains 82 per cent. of water, serum albumen, alkali-albuminate, nuclein, lecithin, cholesterolin, fats and phosphorised fat, salts (2 per cent.) especially phosphates of the alkalies and earths, together with sulphates, carbonates and chlorides.

As the semen cools after emission it becomes temporarily gelatinous, and if it be kept at rest in a test-glass, it gradually separates into two layers, which, after some hours, are of about equal thickness. The lower stratum is dense, opaque, and contains the cellular elements. The upper stratum is thin, more or less translucent, looking

something like whey, and contains but few cells with more or less granular matter.

As regards the quantity of semen emitted at one time, the difficulty of forming a correct estimate is well shown by the difference in the calculations made by different observers. For example, the average quantity is given by Liégeois as 1 to 3 grammes; by Austin Flint as half a drachm to a drachm; by Mantegazza as 0.75 to 6 cubic centimetres; by Duval as 1 to 8 grammes; by Ultzmann as 10 to 15 grammes; and by Leopold Casper as 5 to 20 grammes. Thus Ultzmann's and Casper's estimates are seen to be far above the others. This wide difference is no doubt partly due to the fact that the quantity is liable to vary in the same person according to circumstances, and especially with regard to the frequency or rarity of sexual indulgence, and the interval

that has elapsed since a previous emission at the time the examination is made.

On the whole, it seems probable that the average quantity emitted by a healthy man under normal conditions is between 1 drachm and 2 drachms. When the sexual act is repeated at too frequent intervals, the quantity gradually becomes less and less, until only a few drops or even nothing at all may be emitted.

The most important constituents of the semen are the modified cellular elements produced by the testes, and known as spermatozoa or zoosperms.

Landois defines a spermatozoon as a detached independently mobile cilium of an enlarged epithelial cell, measuring 50 μ in length. According to Halliburton, a spermatozoon consists of a head, a very short neck, a body, a tail, and an end-piece. The head

is of flattened ovoid shape, and in the anterior two-thirds of its extent is surmounted by a head-cap which, sharpened at its extremity, forms a cutting edge. The head is formed from the nucleus of the spermatid, and the body and tail from the cytoplasm. Austin Flint says the head is about 1-5000 inch long, 1-8000 inch broad, and 1-25,000 inch thick.

A fresh specimen of healthy semen, when examined under the microscope (FIG. 1) shows the presence of zoosperms in enormous number, and in active progressive movement. The rate of movement is given by Landois as from 0.05 to 0.5 mm. a second, being of course most rapid immediately after the fluid is shed. The head of the zoosperm is propelled forward by a whip-like wriggling of the tail.

According to Ultzmann, normal semen, when examined with a No. 3 eyepiece and a

No. 7 objective (Hartnack), should show at least 100 zoosperms in the field at one time. As a rule, however, there are many more than that, and it has been estimated that the number discharged at a single emission amounts to several hundreds of millions.

Besides zoosperms the semen also contains seminal cells, epithelium of various forms from the genito-urinary passages, and fine granular matter called seminal granules. Two forms of crystals are also found in the semen. First, very small colourless four-sided crystals which may be seen in some specimens of normal semen soon after emission, and while the zoosperms are still in active movement. Secondly, the very much larger rhomboidal bodies known as Böttcher's or Schreiner's crystals which, as a rule, only appear in normal semen some considerable time, perhaps 2 or 3 days, after emission.

When the zoosperms are absent or few in number, these crystals usually form much earlier. According to Schreiner they consist of phosphatic salts with an organic base.

Zoosperms are not found before puberty, but in healthy men they may continue to be produced until a late period of life. Curling found them several times in the testes of men upwards of seventy years of age, and once in a man of eighty-seven. Duplay also discovered zoosperms in the testes of nine octogenarians, while Casper states that Abel observed them in a man of ninety-six.

But though zoosperms may be present in old men, it would seem that they do not always possess fertilising power. Pajot thinks Duplay made a mistake in concluding that old men are capable of procreation at any age. He agrees that zoosperms may be present in old age, but states that they are

very different from those found in healthy young men. They are one-half shorter, more slender, and though under the microscope they can be seen to oscillate, they do not move across the field. Pajot also states that he knows such zoosperms cannot impregnate, because he has so often met with them in what he calls old-young married men, with young and healthy wives who were childless.

Zoosperms are absent for a time after excessive sexual indulgence. Liégeois examined the semen of a student who had had intercourse three or four times daily for ten successive days, and no zoosperms could be seen. But after three weeks' abstinence they were found in enormous quantity.

The physiological variations that may occur in the zoosperms, both as regards number and size, are well shown by the

following observations made by Casper on the semen of a vigorous man of sixty, and recorded in his work on Forensic Medicine : On one occasion, on the third day after coitus, there were a large number of very small zoosperms, while on the fourth day, after renewed coitus, they were few and small; after a pause of two days there were none; after a pause of one day there were none, and the fluid was watery. At another time, on the fifth day after coitus, the zoosperms were very numerous. At another time, after a pause of six days, they were few in number, but of large size. Four months later, and three days after coitus, the zoosperms were comparatively small; whilst on another occasion, on the third day after coitus, they were innumerable.

It is still stated by some writers that the zoosperms do not show activity until they

reach the seminal vesicles, and Fürbringer attributes their motility to the prostatic secretion. Martin, however, found motile zoosperms in the epididymis, and Griffiths, of Cambridge, found numerous active zoosperms in the seminal tubules of both testes which had been removed for enlarged prostate from a man aged 74.

The length of time the activity of zoosperms may continue outside the body varies considerably in different cases and circumstances. Ultzmann says that in healthy semen, suitably protected from light and cold, living zoosperms can be detected even after 48 hours. I have myself observed progressive movement at various times up to 60, 70, and once 84 hours after ejaculation, in specimens taken from semen kept in a loosely-corked test tube, and not protected from light or cold in the month of April.

Even on a slide movement may continue for many hours. For instance, in a specimen on a celled slide, after 24 hours, I found many zoosperms in active motion. After 30 hours, fewer showed activity. After 48 hours, most were stationary, many oscillating, but some were still moving across the field. After 72 hours there was no progressive movement, and oscillation of only a few. On the other hand, movement sometimes ceases in six hours, or even less. The examination should always be made as soon as possible after emission, and care should be taken not to mistake a mere wobbling of the crowd of zoosperms for progressive movement.

Cold has an adverse influence, and in winter a cold slide may stop all movement, which, however, can sometimes be restored by warmth.

Sometimes, too, the seminal fluid is so thick that the zoosperms seem unable to move. This colloid state of the semen which, by the way, is mentioned by Lucretius, may be physiological or pathological, and will be referred to again.

Movement is also quickly arrested by acids, excess of alkalies, and by water. When the semen to be examined is contained in a protector it should be transferred to a warm glass as soon as possible. I have occasionally suspected that something used in the manufacture of certain rubber protectors may be responsible for impaired motility of the zoosperms.

It is generally said that moving zoosperms are never seen in the urine, but this requires qualification. I have seen decided movement in a case in which a shred contained in faintly acid urine was examined an hour

after the urine was passed. Perhaps the mucus of the shred protected the zoosperms in this case, or perhaps the urine happened to be just of favourable density.

It may be as well to mention that the mere presence of zoosperms in the urine does not give any indication to the naked eye, but if the other constituents of the semen are also present they appear as a stringy cloud studded with flocculi, which floats for a short time and then settles gradually to the bottom of the glass.

Ultzmann points out that zoosperms which have died naturally after emission present a straight or only a slightly curved tail, while those which were dead before emission have the tail coiled or bent at an angle (FIG. 2). This should be remembered in examining the semen when the zoosperms are dead, and as far as my own observation goes it appears

to be a trustworthy sign. Ultzmann also states that a similar condition of the tail is usually found when the zoosperms have been killed by some injurious secretion such as urine or the acid mucus of the vagina, and that when movement has been arrested by water the tail not uncommonly forms a loop (FIG. 2).

Certain deformities of the zoosperms, such as an abnormally large head, two heads, or two tails, are occasionally met with in one or a few specimens among a normal crowd. These deformities do not appear to have any known significance.

In examining a *dried* specimen of semen under the microscope, care must be taken to go over the whole of it, for in drying the zoosperms tend to run together in groups, so that while some fields may be crowded with them, in others there may be few or even none.

The zoosperms may preserve their form in the dried state for a number of years. I have now a specimen of semen which was put up on an ordinary slide with a cover-glass, but without mounting or reagent of any kind, in 1891. Since then it has remained with no other protection than the glass shade used to cover the microscope, and although for some time the number of recognisable zoosperms has been gradually diminishing, many of them, after nearly 19 years, can still be identified.

Of the other secretions which go to make up normal semen, that of the seminal vesicles, and probably that of the dilated ends of the vasa deferentia also, is thick, and sometimes contains small masses of glairy mucus, resembling sago grains.

The prostatic secretion is thin, milky, albuminous, amphoteric or slightly acid in

reaction, and is supposed to give the semen its peculiar odour, and to be the source of Böttcher's crystals.

The secretion of Cowper's and the smaller urethral glands is a clear alkaline glycerin-like fluid, which in ordinary conditions is scanty, and serves to lubricate the urethra; but under the influence of sexual excitement, and especially during coitus, it is produced in much larger quantity.

All these secretions contribute their share towards the proper composition of the seminal fluid, and the urethral mucus serves also to neutralise acidity due to the passage of the urine.

CHAPTER II.

QUANTITATIVE CHANGES IN THE SEMEN.

THE physiological characters of the semen having been described in the preceding chapter, the pathological changes to which it is liable have next to be considered. These changes may be quantitative or qualitative.

Polyspermia, or the emission of an abnormally large quantity of fluid is, as may be gathered from the remarks in the preceding chapter, not easy to define exactly. Of course, in such a well-marked instance as that recorded by Ultzmann, in which the quantity measured 35 grammes, there could be no doubt about the excess. The patient was a very nervous excitable man, but

examination of the sexual organs revealed nothing abnormal. Such cases are probably rare, and not of much practical importance. Ultzmann states that in polyspermia the excess is due to increase of the liquid portion, and that there is no actual increase in the cell elements or zoosperms. Thus polyspermia suggests over-secretion, either by the prostate or seminal vesicles or urethral glands or all of them and probably due to nervous influence.

Oligospermia, or the emission of semen in abnormally small quantity is, like polyspermia and for the same reason, difficult or impossible to define exactly. The condition is natural in old age, and occurs temporarily after sexual excess, and also in certain debilitating diseases. As the semen is composed of several secretions it will, of course, be diminished in proportion if one or other of

its constituents be absent. If the zoosperms only are wanting, the quantity of emitted fluid may not be markedly affected, but if the prostatic fluid and the secretion of the seminal vesicles be from any cause excluded, the fluid emitted may be so scanty that such cases are often included under aspermia. The diagnosis will depend on careful study of the history and of the patient himself, with or without the assistance of the microscope.

Aspermia.—This term is now somewhat loosely used to denote not only absence of semen as the name would imply, but also conditions in which semen is produced, but is in some way prevented from escaping in the normal manner. Aspermia may be congenital or acquired, permanent or temporary.

Congenital aspermia may be due to some

defect or malformation of the genital system, but congenital aspermia, in which without discoverable cause semen has never been emitted in any circumstances, is very rare. Ultzmann has recorded two cases, and the following instance occurred in my own practice :—

A man, aged 20, consulted me because he had never had a seminal emission either waking or sleeping. He said he had not attempted sexual intercourse, but had practised masturbation without ever having been able to produce emission. Sexual desire was present, and he had erotic dreams accompanied by erection once or twice a fortnight, but though he was awakened by a sensation as of emission, no emission ever occurred. There was no history of disease or injury of the genital organs, and he had never had mumps. On examination the patient was

slightly built, but had all the outward signs of virility. The prepuce was short and not tight. The testes and epididymes were normal in size and consistence. The vas deferens could be plainly felt on each side, and there was no varicocele. A No. 19 (French scale) *bougie à boule* passed easily to the bladder, no part of the urethra being abnormally sensitive. Per rectum, the prostate was normal to the touch and not tender. The urine was clear, acid, and contained neither albumen nor zoosperms. On a second visit the urine passed immediately after an erotic dream was brought to me, and four specimens were examined with the microscope, two after the urine had been standing for six hours, and two more after twenty-three hours. In none of these were any zoosperms to be seen.

Relative Aspermia.—The term “relative”

is applied to cases in which semen is emitted in some circumstances but not in others.

Relative aspermia may assume one or other of several forms. In one form semen is never emitted in coitus, or at any other time during the conscious state, though emissions occur during sleep. The following is an example of this curious form of aspermia :—A slightly-built man, aged 28, of strong sexual feelings and good general health, consulted me on account of inability to complete coitus by ejaculation. He stated that emission had never occurred, either during coitus, or through artificial stimulation, or at any other time in his life whilst he was awake. He had nocturnal emissions from time to time, accompanied usually by erotic dreams. On all such occasions, however, the emission was suddenly arrested the moment he awoke. Erection was perfect,

and there was no difficulty about penetration in coitus, but however long the act was continued emission never occurred, and finally erection subsided without any feeling of distension in the urethra, and without pleasure, and there was never any oozing of fluid afterwards. A specimen of the semen emitted during sleep was brought to me, and found to contain active zoosperms. He had never had any venereal disease, and there was no stricture. The deep urethra was perhaps over-sensitive, but there was no other discoverable local lesion, defect, or malformation. The cremasteric and bulbocavernosus reflexes were absent. The patient had no marked neurotic symptoms himself, but his mother was said to be nervous and hysterical.

In another case of relative aspermia, in a man of 21, there was no difficulty as regards

emission when the stimulus was artificial, but failure during coitus, though both erection and intromission were quite satisfactory.

In such cases of aspermia the cause is no doubt to be looked for in the nervous system, but at present no satisfactory explanation is at hand. To say, with Schulz and Ultzmann, that the cause is non-excitability of the ejaculation centre, complete or relative, is merely another way of saying that we do not know. Matthews Duncan mentions the case of a married man in good health but apparently feeble both in desire and capacity in whom "the rare connexions were only occasionally accompanied by emission, and the semen which the surgeon examined was sometimes healthy and sometimes azoospermic. This man had not had connexion with any other than his wife, and he declared he had used no kind of solitary indulgence."

Acquired aspermia is not nearly so rare as the congenital form. It may be permanent or temporary, and the cause may be mechanical or neuro-psychical.

Prostatitis from gonorrhœal or other inflammation involving the ejaculatory ducts, is perhaps the commonest local cause of acquired aspermia, and atrophy of the prostate or cicatricial contraction following suppuration, may either occlude the ejaculatory ducts or may so displace or distort them that if semen escapes at all it passes backwards into the bladder. Tuberculosis or injuries of the prostate or its urethra may have similar effects, and senile prostatic enlargement may also interfere with the permeability of the ejaculatory ducts.

Among injuries to the prostate the operation of perineal *Lithotomy* has probably been a not infrequent cause of sterility in the past,

when that operation was more common than it is now. Cases bearing on the subject have been reported by many observers, and Teevan and others have published instances in which emission was known to have ceased to occur after the operation. But it is still uncertain exactly to what extent sterility has followed perineal lithotomy because, in so many of the records, the evidence of sterility appears to be based merely on the fact that the wives were childless, and not on examination of the man himself and his secretions.

As regards *Prostatectomy*, E. H. Fenwick remarks that no promise can be made as to the retention of sexual power. The desire, or the seminal fluid, or the erectile power may be lost, or all may remain, and even in a very small percentage be improved. It mainly depends on how the ducts are interfered with by the growth and by the operator.

Acquired aspermia, due to the causes already mentioned, is mostly permanent. But it may be only temporary, and is then sometimes due to inhibition by the cerebral centre, as in the case of fear, anxiety, over-excitement or other emotional cause, and here erection may or may not fail also.

Among the causes of aspermia must also be included the practice of *interrupting coitus*, which is too frequently resorted to at the present time, with the object of avoiding pregnancy. One of my patients, after having become the father of five healthy children, adopted this method of preventing further increase of his family, and practised it with apparent impunity for five years. After that time emission began to fail, at first occasionally, then more frequently, until at the time he consulted me emission had failed to occur for periods of two or three

weeks in succession. The ill effects of interrupting coitus probably depend not so much on mere withdrawal before emission as on interference with the discharge of semen either by voluntary effort or by digital or other pressure on the urethra. A rubber ring is sometimes used for this purpose, and W. A. Hammond refers to three cases in which sterility was caused in this way through the semen passing backwards to the bladder even after the use of the ring had been abandoned.

In other cases temporary aspermia may be caused by some local source of irritation, either in the external organs, the urethra, or the prostate, setting up reflex muscular spasm.

Anæsthesia of the glans penis would appear to be an occasional cause of aspermia. Curling reports a case of this kind which was cured by blistering. He also mentions

another case of non-ejaculation, in which the nerves appeared to have been destroyed by a syphilitic ulcer of the dorsum penis, or compressed in its cicatrisation. A state of incomplete anæsthesia seems sometimes to retard ejaculation without altogether preventing it, as in some cases of tabes.

Concretions in the prostate or ejaculatory ducts may also interfere with the escape of the semen.

The term *False Aspermia* is applied to cases in which semen enters the urethra, but is in some way prevented from leaving it in the normal manner.

Stricture of the urethra is the commonest of such causes, but epispadias hypospadias and urethral fistulæ communicating with the perinæum or rectum, may divert the semen from its natural course and thus cause sterility.

With regard to stricture, it must be remembered that it need not necessarily be very narrow in order to prevent the semen from escaping, for a calibre that easily allows urine to pass when the penis is flaccid, may be quite sufficient to prevent the passage of the much denser semen when erection is present. Besides, the urethra in the neighbourhood of a stricture is always more or less irritable and inflamed, and consequently muscular spasm is also a contributory factor. These points were well brought out in the case of a man, aged 23, who had had gonorrhœa as well as a perineal abscess, and who for some time had been aware that the urine stream was gradually becoming smaller. At the time he consulted me there had been no emission during coitus for about two months. Sometimes semen oozed away afterwards, and when it did not do so he

noticed that the urine next passed was cloudy and thick. The urethra was very tender and irritable, and at $5\frac{1}{2}$ inches there was a stricture admitting No. 14 (French scale). Under general sedative treatment and gradual dilatation of the stricture he soon began to improve, and after No. 24 was reached he got quite well.

Large Preputial Calculi and an extreme degree of *Phimosis* may also interfere with the discharge of the semen, and a *very short frenum* may so drag down the meatus that the semen takes a wrong direction. Hammond states that an extreme degree of erection is sometimes sufficient to obstruct emission, and he mentions a case which was cured by half drachm doses of sodium bromide taken three times a day for a week.

CHAPTER III.

QUALITATIVE CHANGES IN THE SEMEN.

It has already been mentioned that in general appearance normal semen resembles a decoction of starch. It also leaves a greyish-white stain on linen, which becomes stiffened when dry. In disease the quality of the semen may be altered in various ways.

A *colloid* state of the seminal fluid is generally said to be due either to a preponderance of the thicker secretion of the seminal vesicles or to diminution or absence of the thinner prostatic secretion. But a similar condition is found in some healthy men when there has been no discharge of semen for some time.

The semen is *thinner* and more watery

than it should be in certain cases, and usually in connection with diminution or absence of zoosperms. In polyspermia also the fluid is thin.

The quality of the semen may also be affected by the addition of some extraneous and more or less deleterious material, such as blood or pus.

When *Blood* is mixed with the semen the colour is changed to red or brownish-red or brown, according to the quantity of blood present and its source.

The commonest cause of bloody emissions is posterior urethritis, especially in the acute stage and when complicated with inflammation of the seminal vesicles. The presence of blood in the semen may also be due to extreme congestion of the colliculus and the prostatic urethra from sexual excess. Thus it is seen occasionally in newly married men,

and in cases of excessive masturbation. The semen is also sometimes streaked with blood in senile enlargement of the prostate. Tuberculosis of the prostate or seminal vesicles is another cause.

The colour and the appearance of the stains on linen depend on the source of the blood. Ultzmann has pointed out that when the blood comes from the posterior urethra the resulting stains are not uniform in colour, but that there are generally separate blood spots as well as rusty brown seminal spots. On the other hand, when the blood comes from the seminal vesicles, all the stains are uniformly coloured throughout, showing a more intimate mixture of blood and semen.

When the semen contains *Pus* it has a more or less pronounced yellow colour, according to the quantity of pus present, and the stains on linen are yellow or greenish-

yellow. The commonest cause of pyospermia is gonorrhœa, and, as in the case of blood, when the pus comes from the urethra the seminal stains will be irregularly spotted or streaked with it, but when the pus comes from the seminal vesicles the stains will be uniformly yellow.

A brownish-yellow colour of the semen may be due to pus and blood in varying proportion, or in patients with jaundice it may be due to *bile*. The microscope will decide. If the semen contains blood or pus, or both, while the urine is free from them it may of course be concluded that the blood or pus comes from the genital and not from the urinary organs.

Ultzmann has also drawn attention to various alterations in the colour of semen due to the presence of *indigo* which is found occasionally in some excessively nervous

men, especially after sexual excess. He describes a reddish form which, without the microscope, is liable to be mistaken for blood, and another of violet tint. He also states that, though he has never seen a blue specimen, he possesses a bright green one in which the colour is due to a mixture of indigo and pus. I have not myself met with any case of the kind.

CHAPTER IV.

CHANGES IN THE ZOOSPERMS.

THE picture of a dense crowd of active zoosperms presented by the semen in the healthy state may be altered in disease in several ways. Thus the zoosperms may be dead, or they may be reduced in number, or they may be absent altogether.

Necrozoospermia.—As each of the several secretions which go to make up the seminal fluid no doubt takes part in forming a suitable medium for preserving the vitality of the zoosperms, so it would seem that if one or other of them be absent or altered in character, the zoosperms may be deprived of life. When the zoosperms are dead at the time of emission, however, it is generally in

connection with morbid changes of the deep urethra, prostate, seminal vesicles, vasa deferentia, or testes. Inactivity of the zoosperms is also often associated with the presence of blood or pus, though one or both of these may be present and yet the zoosperms may be active. The reason why they are sometimes dead and sometimes living in such cases seems to depend on the presence or absence of micro-organisms or their toxins.

Oligozoospermia, or diminution in the number of zoosperms in the semen occurs naturally in old age and temporarily after sexual excess, but is also not infrequent as a result of disease. Anything that interferes with the production of zoosperms, or their escape into the urethra, may cause diminution in their number, and if one side only is affected the number will be proportionately

less. The commonest cause is gonorrhœa. Tuberculosis or other wasting disease is another cause. But however few in number the zoosperms may be (FIG. 2), if any of them are in active movement, though the chances of impregnation may be diminished, reproductive power cannot be said to be absent.

Azoospermia, or total absence of zoosperms from the seminal fluid, is the natural condition before puberty, and perhaps also in extreme old age. It may be congenital or acquired.

Congenital azoospermia is usually associated with absence or atrophy of the testes, or their retention in the abdomen or inguinal canal, or other misplacement or anomaly of the sexual organs.

The question of the reproductive power of *cryptorchids* has often been discussed, but

much of the evidence seems to be indirect. Most cryptorchids are supposed to be sterile, but some appear to be fertile, though it may be only for a limited period. The present position appears to be (1) that certain cryptorchids, mostly those who married about the twentieth year, are alleged to have become fathers, and (2) that retained testicles when examined after removal rarely show signs of spermatogenesis, and when they do show such signs it is only for a few years after puberty. Bland-Sutton says that in such cases perivascular sclerosis of the gland supervenes, which in a few years renders it sterile.

But apart from any deformity or discoverable disease, the semen in rare cases is said to be devoid of zoosperms, and this condition has been called idiopathic. Robin, for example, states that among several thousand

observations he has five times noted the absence of zoosperms from the ejaculated fluid. All five men, none of whom had ever had epididymitis, were vigorous and free from disease of any kind. It need hardly be said that examination of the semen ought to be repeated under known conditions and at various times before a diagnosis of idiopathic azoospermia is arrived at. In connection with this too it must always be kept in mind that temporary azoospermia is physiological after sexual excess. A case by Matthews Duncan in which the semen was "sometimes healthy, sometimes azoospermic," is cited in the section on Aspermia.

Acquired Azoospermia.—The chief cause of acquired azoospermia is gonorrhœa, by extension of the inflammation to the ejaculatory ducts, and thence to the vas deferens and epididymis, whereby the duct or ducts

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become obstructed or in some other way rendered incapable of transmitting the zoosperms. Most authors attribute the resulting azoospermia to blocking of the lumen of the ducts, but Terrillon believes that in many cases it is due to persistent catarrh of the mucous surface lining the ducts, for in experiments on dogs he found that, after injecting irritating fluids into the vas deferens, the zoosperms disappeared at an early stage of the inflammation thus set up, and before obliteration had had time to occur. Neisser attributes to gonorrhœa in husband or wife from 40 to 50 per cent. of all barren marriages.

Zoosperms may be also absent or few in number, imperfect or dead, in posterior urethritis with prostatitis or spermato-cystitis.

When azoospermia follows epididymitis it

does not bear any constant relation to the frequency or the clinical severity of the preceding inflammation. No doubt in most cases the epididymitis has been double, but this is not a necessity; for, as I have myself observed, azoospermia may follow epididymitis that has apparently affected only one side, while double epididymitis may not be so followed.

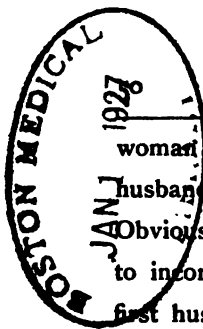
It must also be remembered that inflammation may attack the vas deferens without extending to the epididymis, or at any rate without clinical signs of epididymitis, and therefore it seems probable that gonorrhœa may sometimes cause azoospermia without symptoms other than those which are usually attributed to posterior urethritis. So that it would probably be wise to look upon a man who has suffered from posterior urethritis as under suspicion of sterility, until

or unless some sort of evidence to the contrary is forthcoming.

In aspermia the failure of emission at once tells even the least observant man that something is wrong, and leads him to seek advice. In azoospermia, on the other hand, the quantity of fluid emitted may be so little affected that he is quite unconscious of any deficiency, and as his copulative power may be perfect and his sexual feelings unimpaired, he rarely suspects himself to be the defaulting partner when pregnancy fails to occur. Hence too it happens that a certain number of marriages take place in which the primary cause for which, according to the Prayer Book, marriage was ordained, has no reasonable chance of being fulfilled. And it is clearly unfair that a woman should unknowingly enter into a union which must of necessity be barren.

It would be well if the medical profession made it more widely known that—apart of course from the obscure question of what is called sexual incompatibility—it is quite possible for a man to ascertain with reasonable certainty his condition as regards procreative power, and that before marriage every man who is under suspicion ought to do so. Further, it seems desirable that when marriage has already taken place and turns out to be barren, the condition of the husband should be inquired into before the more troublesome and complicated examination of the wife is undertaken.

With regard to sexual incompatibility it may be remarked that this condition may perhaps be more rare than it is supposed to be. Much of the evidence, as far as human beings are concerned, seems to be indirect, and based mostly on such facts as that a



Sterility.

woman who remained sterile with a first husband has proved fertile with another. Obviously no such case should be attributed to incompatibility, unless the semen of the first husband was known to be normal.

A lump in the epididymis is always suspicious, and should always suggest examination of the semen. But the presence or absence of palpable thickening of the epididymis after inflammation is not to be accepted as sufficient evidence of sterility or fertility. Kehrér, of Heidelberg, examined the semen in 96 cases of sterile marriage, and found azoospermia in 29, but although more than two-thirds of the men had suffered from gonorrhœa, no testicular lesion could be detected in many of them.

Although microscopic examination is the only conclusive test, the appearance of the fluid emitted in azoospermia differs consider-

ably to the naked eye from that of normal semen. The fluid is thinner and more watery in consistence and, after standing for some hours, the deposit forming the lower layer is scanty and sometimes hardly appreciable, instead of the two layers being of about equal bulk as in the normal state. Sometimes also there are small mucous masses like sago-grains which are believed to come from the seminal vesicles. In some cases the azoospermic fluid gives only a dull yellow reaction with nitric acid, instead of the brighter canary-yellow of normal semen. Under the microscope the deposit is seen to consist of epithelium, often in a state of fatty degeneration, granular matter, a variable number of leucocytes, and Böttcher's crystals.

Besides gonorrhœa there are many other causes of azoospermia, temporary or perma-

nent. Indeed, anything that prevents the production of zoosperms or prevents their escape into the urethra causes it.

Syphilis may cause azoospermia when the testis or epididymis has been affected on both sides either in childhood or in adult life, and cases have also been reported in which palpable signs of testicular disease were absent. But apart from lesions of the genital organs themselves, syphilis probably does not often prevent fertilisation of the ovum, though it causes immense destruction of life by killing the foetus later on.

Tuberculosis is another cause of sterility when the genital organs are attacked, and it is to be regretted that the tuberculous are not more frequently incapable of procreation.

Among other diseases in which orchitis sometimes occurs are mumps, gout, malaria, influenza, small-pox, typhoid and some other

infectious fevers. Inflammation of this kind is liable to be followed by atrophy of the testis, and if both organs are attacked sterility may be the result. Fortunately in such cases the testicular affection is more frequently single than double.

Traumatism of various kinds, accidental or surgical, is also responsible for many cases of sterility when both testicles or their ducts are involved; but in surgical operations, if perineal lithotomy and prostatectomy be excepted, only one side is usually affected. Such operations as castration and vasectomy are of course meant to be followed by sterility.

The pressure of large *hydroceles*, *hæmatoceles*, or other scrotal swellings, especially if long-continued, sometimes causes degeneration of the testes and consequent loss of function.

If *varicocele* ever causes sterility, it is probably but rarely, and only in the case of double varicocele would the question be likely to arise. No doubt in varicocele the testis on the affected side is frequently smaller and softer than its fellow, but that is not evidence of loss of function. Indeed, a small and over-soft organ is more likely to be efficient than one that is larger and over-hard; for increased size and hardness may be due to fibroid change of a degenerative kind. If a patient with double varicocele is also sterile, the evidence as regards cause and effect ought to be strong before any operation is decided on for the purpose of curing sterility; and the chances of success or failure should always be explained to the patient beforehand.

In estimating the chances of sterility following one or other of the various affections

already mentioned, it would appear that the cases in which the risk is greatest are those in which gonorrhoeal or other inflammation has spread by direct extension from the deep urethra, and although in the majority of such cases the inflammation seems to be one-sided, it must be remembered that the openings of the two ejaculatory ducts are so near together that when one side is attacked no man can feel sure that the other has wholly escaped. When infection of the testicle presumably occurs through the circulation, as in mumps and some other infectious diseases, the orchitis is also curiously enough most frequently one-sided, but is perhaps less liable to be followed by sterility. In all such cases, however, the only true test is by examination of the emitted fluid. The following case is instructive on this point as well as in some other respects :

A man, aged 35, of strong sexual desire and of perfect potency who had been married 14 years, consulted me because he had no children. He said that for as long as he could remember he had had a rupture on the right side, and that about the age of puberty a small testicle first appeared on that side. The left testicle had always been present in its natural position. Eleven years ago he had mumps, accompanied by swelling of the left testicle. At some period between four and six months after the mumps the semen was examined and the report stated that normal zoosperms were then present. For this reason he felt sure that the sterility was not on his side, and was making arrangements for the examination of his wife by a gynaecologist when he came to me. On examination, there was an easily reducible inguinal hernia on the right side and a

testicle about the size of a filbert. The left testicle was much larger, though somewhat smaller and softer than the average. Both epididymis and cord were apparently normal. I advised him to abstain for a week and then to bring a specimen of the semen, which he did. This specimen was a typical example of the fluid emitted in azoospermia. It was thinner than normal semen, and even after standing 24 hours there was no separation into layers and no obvious deposit. The microscope showed scattered leucocytes, much fine granular matter, and a few crystals, but no trace of zoosperms.

As in the case of apparently one-sided lesion one is not justified from clinical examination alone in assuming fertility, so also when the testes are more or less atrophied one is not justified in assuming sterility, however small and useless the organs may

appear to be. This point is well brought out in a case recorded by Churchman (in the thirteenth volume of the "Johns Hopkins Hospital Reports"), in which a testicle which had wasted to the size of a date-seed after a kick on the scrotum, was removed and found to consist of normal testicular tissue. Zoo-sperms in good number were also present, both within the tubules and in the vas deferens. This suggests caution as regards the removal of any testicle except for some clear and urgent reason.

In the case of epididymitis it would seem theoretically that a lump in the tail which consists of the convolutions of a single duct, would be more likely to cause obstruction than a lump in the head which contains numerous ducts, but whether this is really so in practice seems to be uncertain.

Exposure to the influence of *Röntgen* rays,

whether as patient or operator, has recently been shown to be a cause of azoospermia. In any obscure case of sterility therefore this point should be inquired into.

Obesity has long been known to affect adversely the reproductive power in both sexes. Senator remarks that the impotence frequently noted in fat men is probably due in the first instance to atrophy or other kind of degeneration in the testes resulting in azoospermia. Kisch states that while the general proportion of sterile to fertile marriages is 1 in 10, when the wife is very fat or both husband and wife are very fat, the proportion is 1 in 5. In corpulent men Kisch states that he has repeatedly found the zoosperms few in number or only slightly motile, while in 9 per cent. of his cases they were absent altogether.

Alcoholism.—There has long been a

general belief that alcoholism diminishes fertility in both sexes, but exactly how or why a union turns out to be barren in cases of alcoholism is not always clear. It must be remembered that alcoholism and obesity often go together, and that both fat men and excessive drinkers are not infrequently impotent.

In his lectures on sterility in woman, Matthews Duncan records a striking case of a young woman given to alcohol who remained sterile for several years after marriage without any discoverable disease of the genital organs to account for the sterility. After a year's seclusion and total abstinence from alcohol she immediately became pregnant, and pregnancy also recurred. The same observer states that alcoholic drinking in certain cases induces chronic ovaritis which often comes and goes in the presence

or absence of the cause. When it is present sterility is frequently a result, and its cure is often followed by disappearance of the sterility. This is quoted here because it seems to suggest the question, does alcohol sometimes produce a similar effect in man?

Forel says drink directly diminishes the population, and that in Russia abstainers are much more prolific than drinkers. He also refers to Bezzola's statistics which show that a single drinking bout may have a blastophthoric effect.

The prolonged or habitual use of certain *drugs* is said to be followed by sterility in some cases. Among such drugs may be mentioned opium, arsenic, lead, iodides and bromides. As regards *lead* Verhaeghe, in the course of an inquiry into the health of house painters in Lille, made the curious discovery that there was a much higher per-

centage of still births among children born after the father had become a painter than before.

There are many other alleged causes of sterility, in regard to which the evidence is mostly circumstantial. For instance, it is commonly supposed that the spermatic secretion is suspended in most severe maladies that affect the human race, and this may be so in the case of acute disease, but we know that it is by no means always so in syphilis and tuberculosis.

Among various other influences which have more or less effect, temporary or permanent, on the reproductive power, are changes of *Food* and changes of *Climate*. About these more is known in regard to the lower animals than human beings. Such influences also affect both sexes, and are beyond the scope of the present work.

CHAPTER V.

TREATMENT.

THE Treatment of Sterility will of course depend on the cause, and has to some extent been indicated in the preceding pages.

In *Polyspermia* and *Oligospermia* no treatment is required when active zoosperms are present. When they are dead or absent the condition of the urethra, prostate, seminal vesicles, and testicles, should be inquired into, and if oligospermia can be proved to be due to the absence of any particular constituent of the semen treatment, if any be practicable, should be guided by the result of clinical and microscopical examination.

Aspermia.—In *Relative Aspermia*, when

congenital, the result of treatment is variable. If any cause of reflex irritation can be made out, it should of course be remedied if possible. Even when no organic lesion can be discovered and the cause seems to be wholly psychical, the patient should never be looked on as hopelessly sterile, for there is always a chance that circumstances may arise in which the inhibition may be removed. In the case recorded on page 26, treatment by drugs, the passing of sounds and faradism had no apparent effect; but another similar case in which the result was more fortunate was that of a man, aged 26, in whom the posterior urethra was extremely sensitive with marked spasmodic contraction of the compressor urethræ. These symptoms gradually yielded to the repeated passage of bougies, and faradism was also used. Some time after treatment had been discon-

tinued this patient succeeded for the first time in his life in evoking emission, and no further difficulty was complained of. A specimen of the semen was sent to me and found to contain zoosperms. He had previously been engaged, but had naturally refrained from marriage as long as the disability continued. Whether he married afterwards or not I do not know.

When no improvement takes place and marriage is in question, and still more if the question of issue is of special importance the lot of such men is a hard one; for though essentially fertile they are practically sterile. Ultzmann suggests that when the semen is known to be normal in such cases artificial insemination might be successful.

Acquired Aspermia.—When acquired aspermia is due to some organic change, such as cicatricial contraction following prostatic

suppuration or injury involving the ejaculatory ducts, treatment will hardly be likely to be successful. When tuberculosis or prostatic enlargement is the cause, the result will depend on the course of those diseases.

The form of acquired aspermia due to neuro-psychical causes, and associated with fear, anxiety, over-excitement and other emotional states, often gets well of itself. In many such cases, however, there has been previous sexual excess or misuse, and therefore inquiry should always be made on this point, and also as regards gonorrhœa. Search should also be made for any local condition capable of setting up reflex muscular spasm.

In *False Aspermia* treatment will depend on the nature of the obstruction. Stricture must be treated by dilatation or otherwise,

and urethral irritation and hyperæsthesia allayed as indicated in the case reported on page 34. Hypospadias or Epispadias should be remedied if possible, and urethral fistulæ closed. Preputial calculi must be removed, and extreme phimosis or short frenum dealt with by operation.

When the semen is unusually thick, or as it has been called *colloid*, if active zoosperms are present no treatment is required. If zoosperms are present, but motionless, or if they are absent, the cause should be sought in the testes, seminal vesicles, or prostate. But, as has already been mentioned, colloid semen is sometimes found in healthy men when an unusually long time has elapsed without emission. In one such case in which activity of the zoosperms was defective in the first specimen which I examined, a second specimen emitted an hour after the first showed

zoosperms normal in number and activity. This case suggests the remedy in such circumstances.

Hæmospermia and Pyospermia.—When *blood* or *pus* is mixed with the semen, treatment will depend on the source of the blood or pus, and will mostly be included in the treatment of urethritis, prostatitis, or seminal vesiculitis as the case may be, which is indicated in the chapter on the treatment of impotence.

When hæmospermia is the consequence of sexual excess, natural or artificial, the remedy is obvious.

Necrozoospermia, Oligozoospermia, Azoospermia.—To *Necrozoospermia*, which is not infrequently associated with hæmospermia and pyospermia, the foregoing remarks will also apply. And when no local cause can be discovered the patient's state

of general health should always be carefully inquired into.

When the number of zoosperms in the seminal fluid is abnormally small (oligozoospermia), or when they are absent altogether (azoospermia), or when they are small, imperfect, or wanting in activity, the first thing to decide is whether the condition is physiological or pathological, temporary or permanent.

The rate at which zoosperms are produced probably varies considerably in different men and at different times. So that in any case when few or none are to be found the sexual history should be first investigated. For it seems probable that certain men may be kept in a chronic state of azoospermia, not from disease, but simply as the result of excess. Take, for example, the case of a healthy man of strong sexual feeling who marries and

has sexual intercourse every day, or at any rate oftener than is compatible with his power of producing normal zoosperms. As long as this continues he is naturally sterile, but, as a rule, the excess does not last long. In some cases, however, it continues for years, and it seems probable that a certain number of barren marriages may be thus accounted for. A patient who had been married fifteen years without children told me that he had had connexion nearly every night during the whole of that time. The obvious remedy is abstention for a time sufficient to allow of the formation of perfect zoosperms.

But apart from actual sterility it seems possible that an explanation of the well known fact that the first-born of a family is not infrequently in some way inferior to the later born may be found in the supposition

that during the period of excess immediately after marriage the ovum has chanced to become fertilised by an attenuated and unfit zoosperm. I do not know whether this possible explanation may have occurred to any of those who are engaged in the study of Eugenics, but at any rate it could do no harm if it were utilised by the family doctor in advising moderation to the newly married.

As regards *cryptorchids* and those suffering from other misplacements of the testicles, when the question of marriage has to be determined whatever fluid may be emitted should be examined, and the examination may have to be repeated time after time; for as has already been mentioned some of these subjects appear to be temporarily fertile at some period between puberty and about the age of 20 years.

As *Gonorrhœa* is the chief cause of ac-

quired azoospermia, whenever the posterior urethra is affected the patient should rest, and all possible measures should be taken to avoid extension to the ejaculatory ducts. When signs of implication of the vas deferens or epididymis are present, rest in bed is imperative, together with suitable local applications, support of the scrotum, and careful treatment of the gonorrhœa. Though a testicle should of course be supported whenever it is affected, I know of no evidence that the wearing of a suspender in gonorrhœa has any influence in preventing epididymitis, though I have sometimes suspected it as a cause. A so-called suspender often fails to suspend, in which case it is worse than useless, and merely a source of irritation and discomfort. The local application I have used for many years in epididymitis is a lotion containing one ounce each of strong

solution of acetate of lead and rectified spirit, and six ounces of distilled water. The addition of opium to the lotion merely makes a muddy evil-smelling mixture, and is probably quite inert. The scrotum is wrapped up in lint soaked in the lotion and covered with oiled silk or gutta-percha tissue, and a triangular bandage with thigh straps is applied. It is most important that treatment should be continued if possible until all swelling of cord or epididymis has disappeared.

After the acute stage, if hardness or thickening persist, iodide of potassium or of sodium or both should be given, and mercury may sometimes be added with advantage. A well-fitting suspender must always be worn.

Among the *local applications* for chronic epididymitis mercurial ointment is often recommended, but it frequently irritates the scrotum. When used it should be diluted

with lanolin and almond oil, one drachm of each to six drachms of mercurial ointment, and the patient should be warned about hydrargyrisms. Perhaps less disagreeable is the sweating plan of treatment which consists in swathing the scrotum in cotton wool and then covering it with oiled silk or gutta-percha tissue, the whole being enclosed in a well-fitting suspender. When all tenderness has disappeared, gentle massage is well worth trying. This the patient may be taught to do for himself, and it should be repeated for a few minutes night and morning after bathing with hot water.

I have long been convinced of the futility of the old difficult and disagreeable method of strapping the scrotum with strips of plaster. If pressure is considered advisable it should be intermittent, not continuous, and may best be applied by means of an elastic

bandage, the pressure of which can be regulated by the patient himself. Bier has used his hyperæmic treatment for the indurations following epididymitis. For its application he advises that one or both testicles should be well drawn down, and that a soft rubber tube well padded with wool should then be placed round the root of the scrotum and the two ends fixed with clamp forceps. This together with a suspender is worn for several hours daily, the maximum duration of each application being twelve hours.

Treatment may have to be continued for some time, and the sooner it is begun the better will be the chances of success. In some apparently unpromising cases, however, perseverance may be successful. For instance, Curling cites a case of Godard's in which sterility following gonorrhœal epididymitis was cured after it had lasted a year

and a half, and also gives the following case of his own : "A gentleman, aged 38, was under my care on account of induration in both epididymes after inflammation. He was married, but his semen was destitute of spermatozoa. He continued long under treatment, and only at the end of two years, the induration having diminished, were spermatozoa detected in his semen."

It must be remembered that the proof of success in treatment as regards fertility lies not in the disappearance of hardness or thickening, but in the presence of active zoosperms. I have noted practical disappearance of induration from the epididymes under iodides without any return of zoosperms.

In azoospermia from gonorrhœal epididymitis, when other means have failed, *operative treatment* to establish anastomosis

between the vas deferens and the portion of the epididymis beyond the site of obstruction has been proposed and practised, and Martin, of Philadelphia, has reported successful cases. Posner, of Berlin, states that he has attempted vaso-orchidostomy in a fairly large number of cases, but without success. This observer also recommends that before any operation of the kind is undertaken, the testis should be punctured to ascertain whether zoosperms are present or not.

In *syphilitic* affections of the testis or epididymis active specific treatment must of course be carried out. In tuberculosis sterility should be considered a fortunate thing.

In *general diseases*, such as gout, malaria, and the various specific fevers, the treatment of orchitis is included in that of its cause,

with the addition of soothing applications, support of the scrotum, and rest until all signs of inflammation have disappeared.

To relieve the pressure caused by *hydrocele*, *hæmatocele*, *hernia*, or other scrotal swellings, the remedy will mostly be some form of surgical operation. At the same time it should not be forgotten that certain measures designed for the relief of these conditions may possibly themselves sometimes have a share in the causation of sterility.

For protection from the effects of *Röntgen rays* various means have been devised, and now that the possible effects on the reproductive power have become known, there would seem to be no difficulty in preventing them by the use of suitable screens. It seems probable that azoospermia due to this cause is usually only temporary. In one of Tilden Brown's cases a gradual return to the normal

condition occurred after three months, and Krause reports a case in which living zoosperms reappeared after five months. But of course sufficient time has not yet elapsed to show whether the sterility may be sometimes permanent.

In sterility of the *obese* the obvious remedy is to reduce fat, and all observers agree that if the superfluous fat can be got rid of the reproductive power may return.

When sterility appears to be due to *alcohol or other drugs*, the suspected substance whatever it may be should of course be left off, and restorative treatment adopted according to the circumstances of each case.

IMPOTENCE.

CHAPTER I.

SEXUAL PHYSIOLOGY.

IMPOTENCE may be briefly defined as inability to perform the sexual act in a normal manner.

Before dealing with the phenomena of impotence and some allied matters it will be convenient to refer briefly to the physiology of the sexual function.

This function is under the control of nerve centres situated in the brain and in the lumbar portion of the spinal cord or, as some now suppose, in the lumbar portion of the

sympathetic system. The cerebral centre is the seat of the sexual appetite and impulse. The lumbar centres regulate the machinery of erection and ejaculation.

In normal conditions the cerebral and the lumbar 'centres' act in unison. But the lumbar centres can act without the cerebral centre, for when the spinal cord is severed above the lumbar enlargement both erection and ejaculation may occur by means of the *nervi erigentes* which pass from the lumbar centres to the genital organs. But the cerebral centre may interfere with the lumbar centres and thus prevent the proper performance of the sexual act. This influence is supposed to be exercised through the agency of inhibitory nerves passing between the brain and the lumbar centres, and accounts for some of the phenomena of impotence to be considered by and by.

Erection of the penis, which is necessary for perfect coitus, is due to engorgement of the vascular sinuses of the erectile tissue with blood and is brought about through the agency of the *nervi erigentes*. The erect condition is maintained during the time necessary for the completion of coitus by compression of the efferent veins, which is effected partly by means of the involuntary muscular tissue of the cavernous bodies, and partly by the bulbo-cavernosus ischio-cavernosus and perhaps other of the perineal muscles.

Erection can be evoked by stimulation of the cerebral centre, either by impressions originating in the brain, sexual thoughts for example, or by impressions conveyed through the senses, especially those of sight, touch, and smell. Erection may also be produced in a reflex manner by peripheral irritation

either of the external genital organs, the urethra, or the prostate.

Ejaculation is a reflex act, the centre for which, like that for erection, is situated in the lumbar enlargement of the spinal cord. In normal circumstances ejaculation should only occur when erection is present.

When under the influence of sexual excitement before and during coitus the erectile tissues become distended with blood and erection of the penis thus becomes complete, the veru montanum swells also, and thereby the orifices of the ejaculatory ducts are directed forwards. During this time too Cowper's and the smaller urethral glands are pouring out a clear viscid secretion. As coitus is continued the testicles are forcibly drawn up by the cremaster muscles, and sexual excitement becomes gradually more and more intense until ejaculation takes

place, and this according to Michael Foster is most probably effected by means of peristaltic contractions of the seminal vesicles and vasa deferentia, assisted by rhythmical contractions of the bulbo-cavernosus muscle.

The sexual act in normal circumstances is usually followed immediately by a certain transient sense of languor and sleepiness which is probably due to lowered blood pressure, and which in strong and healthy men may pass almost unnoticed. Sometimes also there is a feeling of chilliness, and a slight fall of temperature has been noted. Soon afterwards a sense of well-being and satisfaction follows, and many men say that coitus has the effect of clearing the brain and rendering them more fit for work than before. No doubt too the sexual act, especially when an unusually long time has elapsed without any escape of semen, often relieves

a nervous irritable man and improves his temper. Haig remarks, in his book on *Uric Acid*, that as the sexual act produces low and falling blood-pressure, it necessarily relieves conditions which are due to high and rising blood-pressure, such as mental depression and bad temper.

But although the nervous shock attending the sexual act may be so slight that it is hardly felt in the healthy state, it may have serious consequences in disease, especially when the vascular system is affected, and in certain exceptional cases the result may be fatal. Poncet, of Lyons, among others, has dealt with this question, and has recorded cases illustrating the evil effects of coitus in various morbid conditions, both medical and surgical. Kisch, of Marienbad, has also reported among 21 cases of sudden death in stout persons, two in which death had

occurred during connexion. Again, Wynn Westcott (*British Medical Journal*, Feb. 29, 1908) remarks: "Simple fatal syncope may be due to muscular exhaustion, especially during or after sexual intercourse; among 1,100 inquests a year, I have about four such occurrences, always in males."

The provocation of sexual desire by bodily (not mental) fatigue, provided it be moderate and not excessive, is a curious and interesting fact, and may perhaps be a survival from the time when the male had to pursue or fight for possession of the female. A. and F. Leppmann state that it is known that soldiers after a long march are considerably more excited sensually than when at rest. Fielding, that keenest of observers of human nature, remarks (in *Tom Jones*) that strong liquor "is never so apt to inflame inordinate desire as after moderate fatigue." Interest-

ing in connection with this also is the following citation from Brantôme : " Il se void souvent parmy les gens de guerre, mesme aux prises des villes par assauts, force soldats tous armés jouir des femmes, n'ayans le loisir et la patience de se desarmer pour passer leur rage et appetit, tant ils sont tentés."

CHAPTER II.

GENERAL CONSIDERATIONS.

IMPOTENCE may depend on various causes and, as will have been gathered from the preceding chapter, may be of cerebral, spinal, or peripheral origin.

Before going further, it may be as well to mention certain general considerations which it is desirable to keep in mind when dealing with disorders of the sexual function.

In the first place it must be recognised that the sexual instinct which originally was obeyed solely with a view to its natural end, the propagation of the race, after ages of misuse has come to be widely regarded as a passion to be indulged merely for the sake of sensual gratification. Not only among

the unmarried, but too frequently also in married life, the natural consequence of sexual intercourse is not only undesired but sought to be evaded in every possible way. The prevalence of habits of satisfying the sexual appetite in various ways other than by natural congress has also to be remembered, for abnormal indulgence forms an important factor in a large number of cases of impairment of the sexual function.

Thus it has to be accepted that much in the present state of society as regards sexual matters is really not physiological but pathological, and thus too it becomes necessary to view men and things not as we conceive they ought to be but as they are, seeing how wide is the difference between natural conditions and those which obtain at the present day.

Each case of sexual disorder should be

studied on its own merits and in connection with its own surroundings, for the manner of dealing with it ought to depend entirely on the result of such study which, it may be added, is made none the easier by the fact that the phenomena of impotence are so largely subjective that the medical man has to rely to a considerable extent on what the patient tells him. Further, in no class of cases is it more essential to take into account the intimate relationship that exists between body and mind.

Both the relations and the differences between Impotence and Sterility also need to be clearly understood. Not a little of what has been written on these subjects in the past is obscure, owing to the use of vague and ambiguous language. A man of course may be both impotent and sterile, but it must not be forgotten that a sterile man is

frequently potent and a so-called impotent man is not always sterile; for there are degrees of impotence, some of which in favouring circumstances are compatible with the procreation of children. If we limit the term 'potent' to those men only who are capable of coitus with the organ in a state of perfect erection lasting until ejaculation has been completed, and affording perfect satisfaction to the agent, it must be admitted that such potency is by no means universal at the present time.

The sexual appetite and the ability to satisfy it vary widely in different men, just as the appetite for food and the digestive power vary. Hence what exactly constitutes impairment of sexual power cannot be stated in exact terms applicable to all cases, and similarly the terms moderation and excess must be understood in a relative

sense. For what may be moderation for one man, or at one time of life, may be excess for another man, or at another time of life. Before puberty, as well as for a certain time afterwards, any exercise of the sexual function is of course excess, and the same remark applies to men who from any cause are out of health, as well as to those in whom impotence is a natural consequence of age.

According to Curling most men are conscious of some decline in sexual vigour after the age of 40. This however is a matter on which no hard and fast rule can be laid down. The duration of potency varies greatly. The age at which it declines depends on the individual, and is to be reckoned not so much by mere years as by the previous wear and tear of life. It is also greatly influenced by the manner in which the sexual function has been treated in earlier life, and by the general

state of health. According to Hammond not one in twenty men in New York is capable of natural satisfactory intercourse at the age of sixty, and the same observer states that it is rare to find a man of fifty capable of intercourse once a fortnight.

Naturally with advancing years sexual desire and power should decline concurrently and equally, and fortunate is the man when it is so. But in civilised man at the present time power not infrequently diminishes or even disappears while desire remains. Hence it happens that men who have misused their powers in earlier life and who have lost the power of erection sometimes seek gratification in perverse and unnatural ways in which erection is not necessary. This frequently leads to trouble and sometimes to the police court.

Lastly, it would be a great mistake to

suppose that those who suffer from sexual troubles, fancied or real, are always to be found among the idle the worthless and the profligate. On the contrary, though mostly neurotic or of neurotic stock, many are honourable men of high intellectual capacity and culture holding positions of responsibility and trust. And it must also be remarked that what are commonly called youthful indiscretions, if abandoned, are not incompatible with the attainment of success and even eminence in the highest grades of intellectual and social life later on.

CHAPTER III.

SECONDARY IMPOTENCE.

THE subject of Impotence has been divided and sub-divided by authors in various ways, and the more division the more confusion. As perhaps no method of sub-division can be entirely satisfactory it seems best for practical purposes to divide simply into :—

1. Secondary or symptomatic impotence when some definite preceding morbid condition is found to be the cause.
2. Primary impotence when no such cause can be discovered.

Secondary impotence is dealt with first because it ought to be excluded if possible before a case is called primary.

One form of secondary impotence, which

is often called *organic*, includes cases in which the hindrance to copulation depends on some defect, malformation, or other abnormality of the genital organs themselves or of adjacent parts, for example: Absence or defective development or atrophy of the penis; some severe cases of hypospadias and epispadias; elephantiasis or tumours of the penis; bending or deviation of the penis on erection from induration of the fibrous sheath, or thrombosis or partial destruction of the erectile tissue, the result of disease or injury; extreme shortness of the frenum. Enlargement and varicosity of the dorsal veins of the penis has also been said to be an occasional cause of impotence, but I have seen so many cases of varicosity of these veins without any evidence or complaint of impotence that I am inclined to doubt it. Large irreducible hernia, hydro-

cele, hæmatocele, and other swellings of the scrotum or testicles, and excessive development of the hypogastric fat may also act as mechanical obstacles to the proper performance of the sexual act.

Varicocele is not infrequently present with disorders of the sexual function, but there seems to be no real evidence that it either causes or is caused by them. According to Sir W. Bennett, varicocele is always congenital though it does not give trouble in childhood and so usually escapes notice until after puberty. He also states that taking the community generally it will be found that 7 per cent. of males have varicocele, and that 80 per cent. of those who have varicocele are affected on the left side only. When a young man with varicocele gets run down in health from any cause, or suffers from habitual constipation or sexual excess, his

varicose veins naturally make themselves felt and they do this, especially in hot weather, by causing a sensation of weight or dragging and sometimes of actual pain which may be either continuous and dull or intermittent and sharp. If the man is neurotic and if the sexual function is out of order in any way, all the trouble, real or unreal, from which he may be suffering is likely to be put down to the varicocele. And such people may be very hard to convince that their fears are groundless. When varicocele causes inconvenience it should be supported by a suspender which, with daily cold douching and attention to the bowels, will suffice for the great majority of cases. Sometimes tonics are needed, and occasionally astringent lotions are also of service. Only when a varicocele is so large as to cause inconvenience from its bulk, or causes severe pain which cannot be relieved

by other means, or is clearly doing damage, either physical or mental, in some other way, should an operation be advised, unless of course circumstances compel the patient to submit to the regulations of some of the Public Services.

Of the general diseases in which impotence is a not uncommon symptom, *Bright's disease* is one of the most important, and care should be taken not to overlook it, for the treatment appropriate when the kidneys are sound may be injurious when they are diseased. Thus one of the first things to be undertaken in all cases of sexual trouble is an examination of the urine, care being taken not to attach undue importance to a low specific gravity of urine passed by a nervous patient at the time of consultation. In connection with this must be mentioned a form of intermittent and apparently functional albuminuria described

by Moxon, in 1878, under the title of "The Albuminuria of Adolescents," and since discussed under a variety of names by a large number of writers. It seems probable that this condition may be due to various causes, and it is noticed here because Moxon, Dickinson, and others, consider masturbation to be one of the chief causes. This should be borne in mind when albumen is found in the urine of boys and young men.

Diabetes is another disease not infrequently accompanied by loss or impairment of sexual power. In temporary glycosuria also sexual failure has been noted as one of the signs of an approaching attack.

In certain diseases and injuries of the *Nervous System* derangements of the sexual function are frequently met with. In some epileptics temporary sexual excitement or perversion occurs, and in *tabes* impotence,

partial or complete, is common, and may be one of the earliest symptoms. In general paralysis and senile dementia, sexual excitement and irregularities are common in the early stage, but impotence follows later on. In other forms of insanity and in idiotcy the sexual function is not infrequently affected; sometimes there may be great excitement and sometimes perversion, with or without impotence. In melancholia, and also in diphtheritic paralysis, there is sometimes complete loss of desire, and in peripheral neuritis from any cause impotence is said to be common. Abnormal persistence of the sexual appetite in old men or its revival after it has once disappeared should be looked on with suspicion, for it may be the first sign of some form of neuro-psychical disorder.

In *Neurasthenia* there may be loss of desire or of power or both. A. and F. Leppmann

state that as a rule in severe accident-neurasthenia there is extinction of sexual desire, and that some experts look on this as almost diagnostic, and refuse to admit a severe accident-neurosis if the injured person has procreated a child since the accident.

Blows on the *head* are occasionally followed by temporary or permanent impotence. *Cretins* are often impotent. They are also frequently masturbators.

In *Phthisis* impotence is present in some cases, but in others there is unfortunately increased desire without impotence, and this leads too often to the procreation of undesirable offspring. Here also may be mentioned the disordered state of the sexual function, often attended by frequent seminal emissions, which is liable to occur during convalescence from *Typhoid* and other fevers, as well as in certain other acute diseases,

Pneumonia for example. These troubles usually subside as health is regained, but in some cases impotence follows, after *Influenza* for instance, and like other sequelæ of that disease may prove troublesome to deal with. *Malaria* is another disease in which impotence has been observed, and also in some cases of *Bilharziosis*. Prolonged residence in hot climates, and especially if a man has lived freely or suffered from *tropical diseases*, frequently has an adverse influence on the sexual power.

In general *obesity* the copulative power is often feeble, with or without loss of desire, and sometimes the patient is also sterile, as has been mentioned in a preceding chapter.

Affections of the *digestive organs* are not infrequently accompanied by temporary impairment of sexual power and appetite. Peyer regards many cases of gastric disorder

as reflex neuroses due to sexual irregularities, and he also considers disturbance of the generative system to be one of the chief exciting causes of asthma in both sexes.

But though disorders of the sexual and the digestive systems are often associated, their relation as regards cause and effect no doubt varies in different cases. Mental depression, due to real or fancied impotence, may affect the digestion through the nervous system, and, on the other hand, temporary disturbance of the sexual function not infrequently accompanies dyspepsia, especially in gouty subjects. Other gouty conditions are also liable to cause sexual disturbance, and this is sometimes due to irritation of the genito-urinary passages by excess of uric acid. Impotence sometimes occurs in middle age, or even earlier, without any

assignable cause. In many cases, however, there is a tendency to gout or obesity or alcoholism.

Constipation with a loaded lower bowel may cause undue frequency of seminal emissions by reflex irritation, in the same way that a full bladder excites erection and emission in the early morning, especially in the supine position. It has also been stated that the *toxins* produced in chronic constipation have an injurious effect on the sexual function in both sexes.

The presence of *Oxalates* in the urine of those who suffer from sexual disorders is well-known to be common, but the reason of this is not always clear. Often there are symptoms of faulty digestion at the same time, but it seems probable that in some cases crystals of oxalate of lime originate in the mucus of the genito-urinary passages.

I have repeatedly found them embedded in the shreds of muco-pus in cases of gleet.

Phosphatic deposits also are common in nervous patients, and these again may be partly of local origin, especially in affections of the prostate. The cloudy-white appearance of the urine, due to earthy phosphates, frequently alarms these patients greatly, as they fancy it is caused by the presence of semen, or as they term it, 'Spermatorrhœa.'

In **Syphilis**, when the genital organs are affected, there may be impotence with or without loss of desire, and this also occurs occasionally without any discoverable lesion of the genital organs and at various stages of the disease. I have noted temporary loss of sexual appetite during both the secondary and tertiary stages, and it is to be regretted that this is the exception and not the rule. Occasionally gummata form in the penis, and

during erection may cause more or less deformity. *Defective sexual development* has been attributed to inherited syphilis. Hutchinson thinks it is not uncommon for syphilis to damage in some slight degree the whole bodily development, and that sometimes there appears to be special defect in sexual development.

Gonorrhœa is, directly or indirectly, responsible for a large proportion of cases of impotence. Indeed, according to Fürbringer, over 50 per cent. are due to that disease. Chronic posterior urethritis, prostatitis, and spermato-cystitis, are not uncommonly accompanied at first by undue frequency of seminal emissions, and later on by imperfect erection and precipitate ejaculation. *Stricture of the urethra*, if old and neglected, may invade the erectile tissue and thus cause deformity on erection, and similar results

may follow extensive abscesses, inflammation of the cavernous bodies, or too deep incisions in internal urethrotomy.

Impotence with reflex symptoms of various kinds, and occasionally suggestive of organic nervous disease, is sometimes met with in connection with urethral stricture, even of quite moderate degree, as in the following case: An officer in the army, aged 40, who had been under my care for syphilis two and a half years before, and who had previously had several attacks of gonorrhœa, came to me again, six weeks after marriage, complaining of deficient erectile power and loss of desire, and also of stiffness and a sensation as of a foreign body within the anus, and pains in the thighs. The pupils and knee-jerks were normal. He had lately undergone a six weeks' course of mercurial inunction and iodides without any benefit, and was in

a very nervous and depressed condition. On examination three strictures were found in the anterior urethra, the narrowest of which admitted No. 16 (French scale). Under the administration of strychnine and dilatation of the strictures he soon began to mend, and by the time No. 23 was reached his general condition had greatly improved; the pains and stiffness gradually disappeared and sexual desire and power returned.

Localised tender spots in the urethra, the result of gonorrhœa, are sometimes the source of reflex irritation leading to frequent emissions. *A contracted meatus*, congenital or acquired, is another occasional cause of reflex irritation, and on the other hand too much cutting of the meatus, which was extensively practised some years ago when Otis's views were in fashion, interferes with the propulsive power in ejaculation.

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Balano-Posthitis and Phimosis, separately or combined, are very common causes of local irritation, which may lead to sexual irregularities or to abnormal seminal emissions. Balanitis may of course occur without phimosis, but with phimosis there is usually also balano-posthitis to some extent.

Whatever may have been the advantages of the prepuce to primitive man in a state of nature, there can be no doubt that to many of the civilised men of to-day it is a potential cause of irritation and discomfort, while the easily vulnerable state of the mucous surfaces beneath greatly increases the risk of venereal infection. Still, when the prepuce is retractable, as it ought always to be, most of the discomfort and some of the risk may be avoided by keeping the parts in a clean and healthy condition.

Balano-posthitis may depend on a variety

of causes, the commonest of which is decomposition of smegma allowed to collect beneath the prepuce and behind the corona. Another form is that set up by saccharine urine, and characterised by a deep crimson or purplish-red colour of the mucous membrane, with a tendency to inflammatory phimosis and fissures of the preputial margin. The presence of this, or indeed of any form of balano-posthitis, should always suggest examination of the urine.

Phimosis may be congenital or acquired, partial or complete, and it is not necessary that it should be complete in order to cause irritation; indeed, a long prepuce without phimosis is sufficient to do so if the glans be habitually covered, unless strict cleanliness be observed.

Thus, in estimating the effect of peripheral irritation of this kind on the sexual function,

it is important to look not only to the presence or absence of phimosis, but to the state of the mucous membrane, for a moist and over-sensitive condition from any cause may be sufficient to account for abnormal emissions or premature ejaculation in coitus.

Among other possible sources of reflex irritation which should be inquired after in the absence of more likely causes are genital *Herpes*, *Eczema*, and other skin diseases of the genital and anal regions, *Fissure*, *Piles*, and other rectal affections, as well as *thread-worms*. In *senile enlargement of the prostate* there is sometimes considerable sexual excitement, with or without impotence.

Among the causes of symptomatic derangement of the sexual function, alcohol and certain drugs must also be included.

As regards *alcohol*, Lauder Brunton remarks that it appears to excite the cerebral

centre, while it partially paralyses the lumbar centre or the *nervi erigentes*; or as Shakespeare says "It provokes the desire, but it takes away the performance." No one will deny that alcohol provokes desire, but that it takes away performance needs qualification. It is no doubt true that a state of absolute drunkenness or of confirmed alcoholism causes impotence, but to most healthy people alcohol especially in the form of a sparkling wine and in moderate quantity is an aphrodisiac, and that it does not necessarily cause impotence is abundantly evident from the testimony of so many patients who say they have contracted venereal diseases whilst under its influence, as well as from the police news in the daily papers. Again, that alcohol and adultery are very frequently associated must be clear to any one who reads the newspapers when the Divorce

Courts are in session. Indeed we have it on the authority of the late president of the Divorce Division, Lord Mersey, in his evidence before the Royal Commission on the Divorce Laws, that "if they could get rid of drink, the doors of divorce courts might almost be closed." So it would seem that if we accept the justice of a large proportion of the decrees *nisi* pronounced in the divorce courts and the truth of the evidence on which they are based, we must also accept it as true that alcohol in very many cases does not take away 'performance.'

Those who are in the habit of taking *opium* or *morphia* and *cocaine* are often deficient in sexual power, and the prolonged use of cocaine locally, to the nasal passages for example, has also been noticed to depress both desire and power. *Indian hemp* or *hasheesh* is said at first to increase desire and

power, but this action is only temporary, and if the drug be continued impotence follows later on. In *Lathyrism* which is due to over-consumption of the food grain called *Lathyrus sativus* or teora sexual power is lost in severe cases.

Other drugs which have been accused of causing impairment of sexual power are chloral, tobacco, salicylic acid and salicylates, iodides, bromides, lead, and arsenic. As regards the last-named drug it may be mentioned that, in the epidemic of arsenical poisoning through beer in Lancashire some years ago, impotence was noticed by several observers. Nitrate of potash, and alkalies generally, if taken in large doses or for long periods, are also supposed to affect sexual power adversely, while chlorate of potash is said sometimes to cause great sexual excitement. Some of the preparations of *thyroid*

gland used in the treatment of various diseases have been thought to act as sexual depressants, while exposure to the fumes of *disulphide of carbon*, especially in the preparation of rubber, besides peripheral neuritis also causes impotence which is said to be not infrequently preceded by satyriasis.

CHAPTER IV.

PRIMARY IMPOTENCE.

IN primary impotence and allied disorders of the sexual function the most important points are :—

1. The psychical element is a prominent factor in most cases.
2. Abnormal seminal emissions due to natural or artificial excess are common.
3. Local changes in some part of the genito-urinary apparatus are present in many cases as a result of irritation and over-stimulation.

Thus the phenomena of primary impotence may be conveniently dealt with by consideration of these three points, and though they may be separated to some extent for the

purpose of description it must be understood that they are often associated in practice, one or other predominating in different cases according to circumstances.

I. Psychical Impotence probably dates from the time when man first began to think about himself, and evidences are to be found in the writings of all ages. It may be present alone, and as an example may be taken the case of a nervous but otherwise healthy young man who, from fear of incapacity or lack of self-confidence, suddenly finds himself impotent on his wedding night. Or, again, a man marries and leads a moderate and healthy sexual life and becomes a father in due course. His wife dies, and after some interval of continence he wishes to marry again. Such a man if at all neurotic, often begins to doubt whether he may not have become impotent from

disuse, and if he dwells on the matter is not at all unlikely to be temporarily incompetent.

Mental fatigue or pre-occupation, or over-work, especially in connection with financial, mathematical, or other absorbing pursuits, not infrequently lessens and sometimes abolishes for the time either desire or power or both. This is probably in obedience to the law of compensation, and many eminent men of various times, including Sir Isaac Newton, are said to have been sexually deficient.

The effect of suddenly calling attention to some irrelevant matter has been amusingly described by Sterne in the clock-winding incident in the opening chapter of *Tristram Shandy*. Fear, anger, disgust, grief, and other *emotional disturbances* are all capable of causing temporary impotence, as is also a

period of too prolonged excitement before attempting coitus.

The term *relative* has been applied to a form of psychical impotence in which a man is potent only in certain circumstances, or with some particular woman and not with another; and if, as Ultzmann remarks, the woman with whom the disability occurs happens to be the wife the situation is an unfortunate one. This form of impotence is probably not uncommon in marriages of convenience rather than of mutual affection.

The curious cases in which a man is potent only when the woman is dressed in some particular way, or has some physical defect or deformity or other peculiarity are really instances of perversion.

Anaphrodisia.—In certain cases the natural instinct seems to be wanting, sexual desire being never experienced, and in most of them

there is arrested development or other manifest defect in some part of the nervous or the sexual system.

In some rare instances, however, there is complete and apparently congenital absence of the sexual impulse without discoverable physical defect, as in the following case: The patient was a healthy looking naval officer, aged 26, with nothing unusual in his general appearance or, as far as could be ascertained, in his genital organs. He stated that he had never felt any sexual desire, though he had occasional erections as well as nocturnal emissions. He had never masturbated, but had attempted sexual intercourse several times, not at all from inclination but simply because he wished to be like other men. On no such occasion, however, had there been either desire or pleasure or erection or emission. There was no history of

injury or severe illness of any kind, and the urine was free from albumen and sugar. There was a family history of gout, but the patient himself had never suffered. His brothers were said to be normal in regard to sexual matters.

Acquired Anaphrodisia is not uncommon. It may be temporary or permanent and due to one or other of various causes, including most of the acute and some chronic diseases and also, as has already been mentioned, absorbing scientific or other studies and occupations.

There are again cases of marriage in which without absolute want of desire there is a state of more or less indifference to sexual matters, as for example in the case of a dyspeptic man of 36 who consulted me for lack of power, and who had lived with his wife for more than ten years without any

attempt at intercourse. His wife had been indifferent, and his own desire though present to some extent had been insufficient to lead him to make any attempt until after the period just mentioned, when as might have been expected he failed.

With the march of civilisation some instincts have been partially or wholly lost. The civilised human female, for example, appears to have lost her maternal instinct to the extent that she now has to be taught how to tend the offspring which she brings into the world. There are also rare instances of individuals whose sexual instinct fails to teach them how to perform the sexual act. I lately saw a healthy man of 44 who had lived fifteen years of married life without proper intercourse through sheer ignorance of the necessary technic. He had been satisfied with certain abortive attempts about

once a week ever since his marriage, and although of course pregnancy did not occur both husband and wife believed that coitus had been naturally and fully accomplished.

Psychical Impotence is much more frequent in connection with the effects of sexual excess or misuse or of gonorrhœa than alone, and is then often associated with a condition of nervous exhaustion and other symptoms of neurasthenia.

The term *Sexual Neurasthenia* is now often used to describe certain cases of general nervous weakness and irritation combined with sexual symptoms. G. M. Beard long ago laid it down that neurasthenia may excite disorders of the reproductive organs, and on the other hand that disorders of those organs as well as masturbation may be excitants of neurasthenia. Doubtless sexual trouble of some kind is often associated with a part or

the whole group of symptoms known under that name, and either the sexual or the nervous element may be the cause or the effect in different cases, a point which can only be determined by careful study of each case and its circumstances. Herman says that a frequent cause of neurasthenia in women is "the too frequent practice of preventing pregnancy without consideration of the feelings of the wife." A similar remark would apply to the husband.

Sexual Hypochondriasis.—Hypochondriasis according to Buzzard is a form of mental unsoundness closely allied to melancholia and characterised by a morbid anxiety without any or only very slight foundation relative to the state of physical health. If for 'physical health' we substitute 'the sexual organs' we have the condition often called sexual hypochondriasis, and the sexual

element makes it none the easier, perhaps even more difficult to deal with in many cases. Sexual excess, natural or artificial, is generally considered to be one of the most potent causes of hypochondriasis. Forel thinks masturbation is not a cause, but that when present it is either an effect of the hypochondriasis or simply associated with it.

The extent to which the psychical element prevails in cases of sexual disorder varies greatly, but as a rule it may be said that the more sensitive the nervous organisation of the patient, the earlier and the more severely will he suffer. The higher the development of the moral sense the more easily will it be wounded, but it does not follow that the degree of mental trouble corresponds with that of the physical trouble if such there be.

Given, then, some previous sexual irregu-

larity in a neurotic subject, the way in which a climax comes about is usually somewhat as follows :—A young man perhaps highly educated and of more than average intellectual power, from one or other cause of mental strain or worry—reading for an examination for instance—neglects to take sufficient exercise, gets his general health upset and his digestion out of order. By and by the sexual apparatus becomes disordered too, and nocturnal emissions occur. These gradually become so frequent that he gets alarmed, begins to brood over his troubles, and perhaps takes to reading books which he thinks bear on his case. Then the recollection of old bad habits comes back to him, and he imagines that they are in some way connected with his present state, draws false inferences, and ends by convincing himself that he is impotent and incurable.

The same end may be arrived at from the starting point of a marriage engagement—an event which is not uncommonly the occasion of much introspective and retrospective self-examination. During such an engagement a nervous young man is liable to suffer from repeated sexual excitement which, if not gratified, is naturally soon followed by undue frequency of seminal emissions, and a sequence of events similar to what has just been described. When marriage is in question, however, matters may assume a more serious aspect if his morbid ideas are not checked; for he may gradually drift into thinking himself unworthy of the object of his affections or that he has committed some unpardonable sin, and thus become reduced to a state of despair owing to a conviction of moral unworthiness or physical incapacity or both. In some of the worst cases the end is

insanity, or even suicide as in a case under my observation some time ago.

With regard to the mental effects of masturbation, Savage (in the Lumleian Lectures for 1907) remarks that though he does not attribute any serious increase of insanity to it, "yet the dread of its results, which are so commonly enforced upon the public by quacks, has a very serious influence in producing a number of youthful hypochondriacs and a considerable number of suicides." Savage also believes that at present "there are more celibates who indulge in the habit to a longer period and greater extent than if they married early."

Of the various means resorted to for satisfying the sexual appetite outside natural coitus, besides masturbation which is the commonest, there are also other forms of artificial stimulation practised by the indi-

vidual alone or in conjunction with others. It must be remembered that mechanical irritation to the extent of producing ejaculation is not necessary to cause ill-effects, for they follow many other devices which may or may not stop short of provoking the sexual orgasm. These include impressions originating in the brain through the imagination as well as impressions conveyed to the nerve centres through any of the senses in a variety of ways which hardly need to be particularised. All such artificial modes of promoting sexual excitement as well as excess in natural intercourse and the practice of interrupting coitus (Onanism) may be placed in the same category as nerve-disturbers.

The last-named artifice for avoiding conception, which has already been referred to as a cause of aspermia, may give rise to a

variety of symptoms as in the following cases : A man, aged 43, owing to his wife's bad confinements and the advent of two children in rapid succession, had for several years, though indulging in coitus twice or three times a week, always withdrawn before ejaculation occurred. At the time I saw him he had for a year lost all sexual desire, and was thus practically impotent, though whether he was actually so was open to doubt as, having lost all inclination, he had made no attempt at intercourse. He also suffered from headache, backache, and other nervous symptoms. Another man with three children whose wife refused to bear any more practised interruption for twelve years. He then at the age of 42 lost all power of erection, though desire remained as strong as ever. Another man, aged 38, had gradual loss of power after six years,

and eighteen months later total loss of desire.

Thus it will be seen that the consequences of this practice vary in different cases. The nervous system always suffers to some extent according to the nervous organisation of the individual, and in addition there may be loss of power or of desire or both. And although sometimes interruption is continued for years without notable mischief, the patient should always be warned that whoever makes a practice of preventing, delaying or checking the natural completion of the sexual act, whether by voluntary effort or by mechanical obstruction of the urethra, may surely expect to pay the penalty sooner or later.

The results of natural and of artificial excess are similar in many respects, but in the case of artificial indulgence the mental effects are usually more marked than in the

case of natural excess. Artificial excess too can be carried to a far greater length than excess in coitus, first because in masturbation erection is not requisite, and secondly because the cooperation of another person is not required.

The ill-effects of sexual excess depend partly on the associated nervous action, and partly on the loss of semen, or to quote the words of F. W. Mott (*British Medical Journal*, Jan. 4, 1908) in reference to the evil influence of sexual excess in the causation of tabes and general paralysis: "It acts in two ways (1) directly by exhaustion of neuro-potential; (2) indirectly, in the male, by the excessive loss to the body of highly phosphorized nucleo-proteids contained in the sperm. These are bio-chemical substances possessed of great specific energy and are not easily replaced."

II. Seminal Emissions.—In many cases of primary sexual disorder one of the chief troubles complained of is abnormal frequency of seminal emissions, or, as the patient puts it, ‘Spermatorrhœa.’ This vague term, by the way, has done an infinite amount of mischief as a bogey for frightening nervous people, and it has really no definite meaning at the present time. By patients it is used as a general name for all kinds of things, and even in the medical profession it is used in different senses by different authors, so that it would probably be best to discard it altogether, at any rate until some general agreement as to its precise signification has been arrived at.

In the normal state ejaculation of semen should only occur when erection is present, and during full consciousness it should only occur in coitus. During sleep, however,

occasional emissions are also normal. These emissions mostly take place in the early morning when the bladder is full and the sleeper lying on his back. Their exciting cause may be either central—an erotic dream for example—or peripheral from distension of the seminal vesicles or of the urinary bladder, or both.

The frequency of nocturnal emissions varies according to the individual and the circumstances of his sexual life. Healthy married men, living under ordinary conditions, do not usually have them at all, or but rarely. Most healthy unmarried men, from the age of 16 or 18 to 40 or later who are continent, have nocturnal emissions at intervals varying from one week to four or five weeks. Under the influence of ungratified sexual excitement or other circumstances such as excess in eating or drinking, indi-

gestion, constipation, or lack of the usual amount of exercise, the frequency of the emissions may be temporarily increased.

Normal emissions apart from coitus have the following characters: (a) They arise during sleep. (b) They are accompanied by an erotic dream, and (c) by erection of the penis. (d) The sleeper awakes as the orgasm is reached. It must be added, however, that occasionally when sleep is so profound that though the spinal centre is stimulated the cerebral centre remains unaffected, emissions may occur without dreaming, and without awaking the sleeper.

In disordered states of the sexual function one or other of these characters may be altered or absent, and the emissions may become so frequent that they occur every night, or even more than once in the same night.

In a still more irritable state of the sexual centres emission may take place in the day-time, with or without erection, under the influence of various slight stimuli, central or peripheral, which in health would have no such effect; for example, libidinous thoughts or impressions conveyed through the senses, riding on horseback, cycling, friction of the clothes during gymnastic exercises or even in ordinary walking. In some of these cases also, anxiety or mental stress, quite apart from sexual matters, and due to such circumstances as working against time in an examination or trying to solve a difficult problem will provoke emission, though here perhaps friction due to the incidental movement and fidgeting may be partly to blame.

The commonest causes of abnormal emissions are excess, artificial or natural, and posterior urethritis, especially when the irri-

tation has extended to the colliculus or prostate or seminal vesicles. In either case the nerve centres get into the bad habit of responding too easily and too quickly to stimuli, and the consequence is that if a man in this state attempts coitus he fails. Erection if it occurs at all is usually imperfect, and emission often takes place before there is time for penetration, or if penetration is effected ejaculation follows so quickly that a feeling of disgust rather than of satisfaction is experienced. This combination of precipitate ejaculation, with absence or imperfection of erection constitutes what has been called *Impotence with irritable weakness*, and it is one of the commonest forms of derangement of the sexual function at the present time.

But though excess or misuse is the predominant cause of premature ejaculation, it may be mentioned that among the married

men of to-day there are a certain number in whom, without apparent adequate cause, the sexual centres seem to be inherently over-sensitive and excitable. This condition may be found occasionally among men of active brain though not always markedly neurotic, who enjoy fair health, and who deny any previous sexual irregularity. Indeed, some say they never exercised the sexual function at all before marriage, and most have married somewhat late in life. Such men, although they may become fathers, complain that coitus comes to an end before they have time to feel full satisfaction from the act. In most of these cases, however, improvement takes place as the man becomes accustomed to the environment of married life, so that many wisely accept the situation and cease to worry about it.

These cases of early ejaculation without

assignable cause, may perhaps mean that under the nervous stress of modern life the sexual centres are becoming more impressionable and more quickly responsive to stimulation, and thus that the duration of the sexual act may be tending to become gradually shorter.

III. The Local Effects of sexual irregularity and excess vary greatly in different cases. Whilst a sensitive man of unstable nervous organisation will suffer first and chiefly in his nervous system, a stolid insensitive man may commit considerable excesses without marked nervous symptoms, and may continue until some affection of the genito-urinary system leads him to seek medical advice.

The local effects produced by excess or misuse, and those due to gonorrhœa, are in many respects similar as regards the sexual

symptoms to which they give rise, but of course in gonorrhœal cases the important question of infection (which does not come within the scope of the present work) has always to be considered.

The commonest local change in primary impotence and allied disorders is hyperæsthesia of the urethra, and especially of the prostatic and bulbous portions, together with a condition of chronic congestion or inflammation probably affecting primarily and chiefly the colliculus and its neighbourhood. Much less frequently, and generally at a later stage anæsthesia is present. It has already been mentioned that as a consequence of great excess in coitus or masturbation bleeding from the deep urethra sometimes occurs, and it may be added that the blood in such cases may appear with the semen or with the urine or with both. Hæmaturia of this kind

may lead to a wrong diagnosis if the real cause is overlooked.

In many cases of excess or misuse there is an intermittent and sometimes an almost continuous discharge of clear viscid glycerin-like fluid due to over-secretion by Cowper's and the other urethral glands. This is an exaggeration of what occurs naturally in coitus and under sexual excitement.

In relaxed conditions of the prostate and its ducts the prostatic secretion is liable to be expressed by straining, especially during defecation and at the end of micturition, and sometimes in more advanced stages without any straining at all. When the ejaculatory ducts are relaxed or infiltrated some of the contents of the vasa deferentia and seminal vesicles may also be expressed, and the same thing may happen at times to healthy men during violent exercise, especially rowing.

All these discharges are usually called 'Spermatorrhœa' by the patient, and naturally enough, if the seminal vesicles have not been emptied for some time, zoosperms in varying number may be present in the discharge, but that of course is no reason why it should be called spermatorrhœa. The microscope will show what the discharge contains, and the significance of the presence or absence of zoosperms will depend on the circumstances of the particular case.

For further information on diseases of the urethra, prostate, and seminal vesicles, some work on genito-urinary surgery should be consulted.

Want of Power in one or more of the perineal muscles concerned in erection and ejaculation, and probably also in the involuntary muscular tissue of the penis, is an important factor in some cases of impotence.

Besides the compressor urethræ the chief extrinsic muscles are the ischio-cavernosus on each side and the bulbo-cavernosus in the middle. The former act chiefly on the corpora cavernosa, while the bulbo-cavernosus acts chiefly on the corpus spongiosum and particularly on the bulbous portion of it. Thus, while the ischio-cavernosus muscles are perhaps called into action only during erection, the bulbo-cavernosus is called into action at every act of micturition, as well as at every ejaculation however brought about. So that the bulbo-cavernosus, which it must be remembered has usually no bony attachment, and perhaps the compressor urethræ also seem more liable than the other muscles to fail from overwork and sexual excess, and this failure may show itself in micturition by imperfect expulsion of the last drops and consequent slight dribbling afterwards; in

erection, by the glans and corpus spongiosum remaining more or less flaccid while the corpora cavernosa may be fully distended; and in emission, by impairment of ejaculatory power, so that the semen, instead of being forcibly ejected, dribbles away slowly and imperfectly. In these cases also the urethra is sometimes more or less insensitive, as shown by the easy manner in which an instrument passes to the bladder without any complaint of pain or discomfort on the part of the patient. In cases of deficient muscular power too there is not infrequently a history of enuresis in earlier life.

CHAPTER V.

GENERAL TREATMENT.

IN the treatment of impotence and allied disorders of the sexual function the first thing to be done is to inquire carefully into the patient's general state, both physical and mental. And the next thing is to find out whether he is suffering from any general or local disease likely to be the cause of the sexual trouble whatever it may be—in other words, not to conclude that the sexual trouble is primary until the secondary or symptomatic forms have been excluded.

In what is called *organic* impotence the treatment, if any be practicable, will mostly be by one or other of the operations which

are described in all works on surgery. It is only necessary here to say a word about the very troublesome class of cases in which coitus is interfered with by bending or other distortion of the penis on erection from the presence of *indurated patches or lumps* in the fibrous sheath or erectile tissue. Besides syphilis and gonorrhœa these have been attributed to various causes, of which gout and injury are the chief. In diabetes also nodules in the penis have been noted, and these are said to diminish in size if the treatment of the glycosuria is successful. The treatment of indurations due to injury or gout is unsatisfactory. Sometimes they decrease in size spontaneously; sometimes the usual remedies for gout, including iodides, seem to have a favourable effect; and sometimes the patches remain stationary or slowly increase in spite of treatment. Locally,

various preparations of mercury and iodine have been used with varying results.

When impotence occurs with *Bright's disease* or *Diabetes*, or as a consequence of injury or organic disease of the *Nervous system*, the impairment of sexual power must of course be looked on as part of the more important malady, and its treatment will thus in most cases be included in that of the original cause.

In functional *Albuminuria* if masturbation be practised its evils must be plainly pointed out and its discontinuance insisted on, while general restorative treatment, according to circumstances, is carried out.

In wasting diseases, such as *Phthisis*, impotence is to be regarded as a fortunate occurrence, and it is to be regretted that it is not more frequently present.

The derangements of the sexual function

which occur after *acute diseases*, are usually only temporary, and require no special treatment. When impotence persists the treatment is the same as that of primary impotence. In impotence with *malaria*, quinine is an important remedy.

In impotence with general *obesity* both desire and potency may return if the excess of fat can be got rid of.

The *digestive system* should always be looked after. The frequent association of sexual and digestive disorders has already been referred to, as well as the fact that their relation as regards cause and effect varies in different cases. Treatment therefore will depend on which of the two is considered to be the primary affection. *Constipation* is common and should always be attended to. A mercurial purge followed by a saline draught is good to begin with, but

if the constipation be habitual, and regulation of the diet prove ineffectual, cascara or a dinner pill containing aloin, rhubarb, belladonna and nux vomica, with or without iron, according to circumstances, often answers well. Gouty dyspepsia, excessive acidity of the urine, as well as any other symptoms due to gout, should receive appropriate treatment.

Oxaluria and *Phosphaturia* should be treated as in other cases with the important addition that inquiry should be made about such local conditions as chronic urethritis or prostatitis, for it would appear that both oxalates and granular phosphates may sometimes have a local origin.

Loss of power or of desire occurring in *syphilis* without local lesions, is usually recovered under specific treatment. Lesions of the genital organs require active treatment

by mercury or iodides or both, according to the stage of the disease.

The treatment of impotence dependent on *gonorrhœa* and due to implication of the posterior urethra, prostate, or seminal vesicles is, apart from the question of infectiveness, in many respects similar to that of non-gonorrhœal cases, and is referred to further on.

In sexual weakness caused by *alcoholism* or *drugs*, the important point is to make a correct diagnosis, and then to take steps to prevent the patient from continuing to take the injurious substance whatever it may be, followed by the employment of such restorative treatment as seems most likely to be useful.

In purely *psychical* impotence, as in the case of a healthy but nervous young man who fails on his wedding night, cure may

nearly always be promised, and friendly advice and explanation that such a state of things is not uncommon and will pass away, are usually enough to calm the patient's fears. In some cases, however, a single dose of a diffusible stimulant in the form of a sparkling wine is a valuable adjuvant in tiding him over his first difficulty, after which there is usually no further trouble. The quantity must be just sufficient to prevent inhibitory action by the cerebral centre without interfering with the spinal centre—in other words, just sufficient to produce a don't-care condition; and for those who have never taken much alcohol a single glass of good champagne taken shortly beforehand will usually be enough.

But if there have been repeated failures extending over days or weeks before advice is sought, and especially if frequent emissions

have also occurred, the stimulating plan of treatment would probably fail and should not be prescribed. In such circumstances temporary separation of husband and wife at night is the best remedy. Separate bed rooms are advisable, but if that is impracticable at any rate separate beds should be insisted on, and if the patient is forbidden to make any attempt for a certain time things will usually come right in a few days or weeks.

In impotence from emotional causes the treatment is obviously to remove the cause whatever that may be.

In cases of *mental pre-occupation* and *over-work*, the remedy lies in changing the mode of life for a time and taking a holiday, combined with a course of whatever tonics seem to be indicated.

In *relative* psychical impotence it has been

said that success in coitus may be sometimes attained through the imagination.

In *Anaphrodisia*, if the absence of desire is inherent, as in the case given on page 121, medical treatment can hardly be expected to succeed. In acquired cases the treatment to be adopted will depend on the patient's sexual history and antecedents, and success will depend on whether the cause can be discovered and removed.

The temporary anaphrodisia which is fortunately common in many severe diseases, usually disappears as health is regained without special treatment.

When the psychical element is merely one factor of a complex condition in which masturbation or other sexual irregularity and its effects are concerned, treatment must be adapted to each case after careful consideration of all the circumstances.

In the first place, the bad habit whatever it be must be abandoned; next, complete sexual rest as regards the mind as well as the body is essential. It is necessary to speak plainly to the patient on these points; for it is curious how many men deceive themselves by imagining that if they abstain from sexual acts they are fulfilling all the necessary requirements of continence. It should therefore be made clear to them that in therapeutics the term continence includes the mind as well as the body, and that repeated sexual excitement provoked through any of the senses, though it may not go so far as to produce emission, is sometimes more injurious than actual masturbation. With complete sexual rest secured, the next step is to persuade the patient to look on his trouble as curable, and to help him to realise that "to mourn a mischief that is past and gone, is

the next way to draw new mischief on." He should also be urged to employ both body and mind in some congenial and useful manner.

Physical exercise in some form is most important, and should be adapted to the age and circumstances of each patient. Walking is good for all, and loafing is bad for all. For the young, cricket, rowing, swimming, tennis, and in many cases football, running, jumping, boxing and wrestling are excellent. Riding on horseback, cycling and certain kinds of gymnastics must be forbidden or encouraged with special regard to the presence or absence of prostatic irritation. For older men golf is greatly to be commended. Motoring, especially the driving of a motor car, is a very good way of taking a man out of himself, and the vibration and rapid movement through the air com-

pensate to some extent for more active exercise.

Change of air and scene is always beneficial, and sea bathing or a course at some bracing health resort inland is often of service.

When circumstances admit of it removal of the patient as far as may be practicable from everybody and everything likely to remind him of the past is most desirable. *Foreign travel* with frequent change of place is an excellent means of diverting the mind in these cases, and to this end an incidental sea voyage will contribute more or less according to the patient's fondness or dislike of the sea. A long voyage should only be recommended with caution to patients suffering from sexual trouble, particularly if a tendency to hypochondriasis be a prominent feature in the case. To send a nervous

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youth addicted to masturbation or a sexual hypochondriac alone on a long voyage is to place him in circumstances most unlikely to be beneficial; for the monotony, idleness and over-feeding incidental to such a voyage are just the things to be avoided by the class of patients in question. So that although travelling by sea as a means to an end is excellent, a long voyage ought only to be advised under suitable conditions, especially as regards companionship and supervision. But of course many people are unable to afford these things, nor is it essential that they should. The youth should be encouraged to live, think, and read cleanly, to do his own work in life to the best of his ability, to put sexual matters out of his mind, and in his leisure to amuse himself with one or other of the physical exercises just mentioned according to his capacity, his inclination, and

the time of year. He should remain in bed only long enough for sleep, and rise on awaking in the morning instead of lying in bed and thinking of his troubles. He should bear in mind that among his greatest enemies are idleness and alcohol, and in many cases tobacco also.

In cases accompanied by extreme mental depression, if the man can bring himself to seek advice and if he be still capable of profiting by it, recovery may usually be looked for in the end; but such cases are difficult to deal with, especially if the patient has become convinced that he is incurably impotent or morally ruined or that he has committed unpardonable sins.

When the causes of mental uneasiness are purely imaginary and arise simply from ignorance, as for example, in the not uncommon case of a man fancying himself

defective because he is not so vigorous as some friend is—or says he is, for these boasters exaggerate greatly—explanation and friendly advice are usually all that is necessary, as also in the case of men who appear to think that sexual indulgence is the chief end of existence, and who fancy something is wrong if they are unable to carry out their wishes whenever opportunity offers.

Considerable excesses are sometimes committed by young people immediately after marriage. But this state of things usually lasts only a short time, and in most cases matters right themselves before any great harm results to themselves. Savage however has seen “several cases of young newly-married people rendered emotionally insane in consequence of a few days’ sexual orgie.” I was lately consulted by a gentleman who was suffering from sleeplessness, indigestion

and general lassitude. He had been married several months and during the whole of that time he had had intercourse every night and frequently during the day also. He was in a highly nervous and shaky condition and appeared to have only a very vague idea that he was committing any excess. He laid the blame on his wife, and by way of trying to keep himself up to her standard of efficiency he was drinking five pints of beer a day, which did not tend to improve matters. In such cases a little plain speaking in the way of warning and advice is necessary, together with whatever tonic treatment seems to be indicated. The possible effect on the offspring of excess in early married life has been referred to in the chapter on the treatment of sterility.

The practice of interrupting coitus should be dealt with by explaining the injurious

effects of such abortive intercourse, and by urging the patient to abandon it. The further treatment, if any be required, will be that of Neurasthenia or Impotence or both, as the case may be.

Before beginning any plan of treatment with the object of checking seminal emissions it is necessary to determine in each case whether they really are abnormal or not. If they have the characters described in the preceding chapter as normal, and are followed by no ill-effects, no special treatment is necessary.

When nocturnal emissions are clearly too frequent, inquiry should be made with regard to errors in diet and digestive troubles, alcoholism, lack of sufficient exercise, and so on, and treatment will depend on the result of the inquiry.

When the frequency of emissions is due to

repeated sexual excitement without gratification, such as occurs in some marriage engagements, especially if prolonged, the patient can only be advised to avoid the occasion of excitement—which advice he probably will not follow—and to get married as soon as possible.

Those who have indulged to excess either naturally or artificially, on first abandoning their bad habit nearly always suffer from frequent emissions. They must be told that this is inevitable for a time and must be encouraged to persevere, with the assurance that the emissions will gradually get less frequent as time goes on.

In all these cases much can be done by attention to the general health. The diet and proper action of the bowels should be looked after, and abstinence from alcohol enjoined. The excessive use of tobacco,

especially cigarette smoking with inhalation, is always injurious, and smoking should either be prohibited altogether, or reduced within very narrow limits. Excessive tea- and coffee-drinking must also be avoided.

When the emissions, besides being too frequent also lack the characters of normal emissions, and especially if they are followed next day by marked depression and languor, the patient must be systematically treated after careful inquiry into the cause. If the symptoms suggest some lesion of the urethra or prostate, local treatment (which is dealt with further on) may be necessary.

In the treatment of *irritable weakness*, characterised by imperfect erection and premature ejaculation in coitus, the first and most important point is complete sexual rest for a period which will vary according to the case, but which should never be less than

three months. If the patient be married temporary separation of husband and wife at night must also be insisted on. General hygienic treatment and hot or cold bathing are often required, and local treatment may or may not be necessary, as will be explained by and by. It should be remembered that in some of these cases alcoholism or excessive smoking plays an important part.

With a view to prevent congestion of the genital organs and thus lessen the liability to nocturnal emissions, certain auxiliary measures are often helpful. The bladder should always be emptied immediately before retiring, and it is a good plan, as advised by Diday, to empty it about an hour before also. The last meal should be a light one without alcohol, and at least three hours before bedtime. The bed covering should be light, the mattress firm, and the window open. If

there be a tendency to sleep on the back, in which position emissions most frequently occur, some device for preventing the supine position is advisable. For this purpose an ordinary cotton reel or some other hard object should be fixed over the spine by tapes. A belt with the buckle behind may serve in some cases. A knotted towel is sometimes recommended but is unsuitable because of its bulk.

The Drugs used in the treatment of impotence and allied conditions, as well as the general rules for prescribing them, are much the same as in other diseases, bearing in mind that these patients do not always or necessarily require any drugs at all.

Alkalies, such as citrate of potash and the bicarbonates of sodium and potassium, combined with sedatives or tonics according to circumstances, are often of great service in

dyspepsia, gouty conditions, and irritation due to over-acidity of the urine.

Aperients.—An occasional mercurial purge followed by a saline aperient is useful in most cases, especially in hypochondriasis. As a general rule too from half a pint to a pint of hot water should be taken every morning on rising, and to this a small quantity of sulphate of soda or magnesia should be added when the bowels do not act easily and sufficiently.

Sedatives.—The bromides, belladonna and hyoscyamus, are often of the greatest service in irritable conditions of the generative organs, and when seminal emissions are very frequent, camphor, chloral, antipyrin and phenacetin are all useful in certain cases. The bromides are often best given with an alkali, and combined with other sedatives or with tonics according to circumstances.

Tonics.—Of these, iron, quinine, nux vomica or strychnine, and arsenic are perhaps the most generally useful.

Iron and quinine may often be combined with advantage, but whenever Iron is prescribed measures should be taken to guard against constipation.

As regards arsenic, it must be remembered that though a valuable nervine tonic, it may itself cause impotence if given in large doses or continued for a long time.

Nux vomica in combination with alkalies or acids is valuable in the digestive troubles, which are so commonly associated with sexual troubles. But when there is a tendency to frequent nocturnal emissions, the irritable condition should be allayed by sedatives before nux vomica is given. Strychnine is indicated in most cases in which, without increased irritability, there

is deficient power of erection with or without loss of desire. It may be given in solution or in the solid form, and combined or not with other drugs. It is best to begin with about $\frac{1}{60}$ grain, and to increase the dose gradually as may be necessary. To obtain the full benefit from strychnine, the drug may have to be continued with intervals for some months, the effects of course being carefully watched, and the dose regulated according to the case.

Valerianates sometimes act well in nervous and hypochondriacal cases. The valerianate of iron, quinine or zinc, or a combination of all these may be given, the dose of each being about a grain to begin with.

Ergot is usually given on account of its action on involuntary muscular tissue, and in relaxed conditions of the prostate and seminal vesicles and their ducts it is often

beneficial. Eustace Smith considers ergot to be also a nerve sedative, and his success with large doses in the treatment of chorea, suggests a wider field for its employment in some of the nervous forms of sexual disorder. Beard looks on the fluid extract in doses of from one drachm to two drachms as one of the most successful remedies of neurotherapeutics.

Phosphorus, besides being a nerve tonic, is also one of the so-called aphrodisiacs. It is sometimes prescribed in depressed conditions of the sexual function, either in the form of globules containing phosphorated oil, or as phosphide of zinc, or in one or other of the numerous preparations of glycero-phosphates or of hypo-phosphites in combination with syrup or malt extract.

Cantharides is another aphrodisiac, which probably acts chiefly by its irritating effect

on the mucous membrane of the genito-urinary passages. A single dose of from 10 to 15 minims of the tincture is sometimes followed by vigorous erection, and thus may be occasionally useful in certain cases of functional impotence, but cantharides should not be given without a preliminary examination of the urine, and if it is continued the urine should always be watched for blood or albumen, and in case either appears the drug must be stopped at once.

With regard to these aphrodisiacs Curling remarks that the condition in which they are applicable is chiefly that in which the penis is but feebly excited, and does not maintain the physical state necessary for penetration or for congress. Such torpidity, he states, may exist in persons in whom desires are at times strongly felt, and the functions of the testes properly performed, and that in these

cases, and also in timid persons, and those whose organs are inexcitable from long disuse, stimulating treatment may be successful.

Opium in small quantity may also be reckoned among the aphrodisiacs, and it probably acts much as a glass of champagne acts, by producing a don't-care condition. With this object a dose of 5 or 6, but not more than 10, drops of laudanum may be given in certain cases of psychical impotence.

Aphrodisiacs should not be prescribed in cases of sexual excess, nor should they be given to old men.

Besides the officinal drugs there are many others which have been introduced from time to time on account of some alleged special influence over the generative organs, and which, however widely they may differ in other respects, seem to agree in this—that they are uncertain in their action and not

infrequently disappointing in their effects. The following are among the best known of these drugs.

Damiana is said to be a nerve tonic of great value in sexual debility, and is prepared both as a fluid and as a solid extract. Sometimes it seems to be beneficial, and one patient, a medical man, told me he thought he had derived benefit from it. In other cases it upsets the stomach, and does no good at all. Some of the preparations of damiana seem to vary in action according to the maker.

Yohimbine, now advertised also as *Aphrodine*, is an alkaloid prepared in Germany from the bark of the Yohimbehe tree, a decoction of which is said to have been long used as a tonic by the natives of the Cameroons. It is supposed to act as a stimulant to the erection centre, and owing

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to its vaso-dilatory action produces hyperæmia of the testes and the penis. It is prescribed in solution and also in tablets, each containing $\frac{1}{15}$ grain of aphrodine chloride, and has also been used hypodermically, the dose being from 8 to 16 minims of a 2 per cent. solution. A medical man who took Yohimbine for a fortnight told me that he had noticed congestion of the testicles about an hour after the dose was taken, but there was no improvement in potency. Posner, who has prescribed the drug in a large number of cases, states that he has modified his former favourable opinion of it. He now thinks that though probably useful in some cases, in the majority it is absolutely useless. Albert Moll has never obtained any results from Yohimbine which could not be attributed to suggestion.

Muiracithin is a combination of an extract

obtained from a Brazilian drug Muirapuama with Lecithin, and has been recommended by certain writers in Germany and elsewhere as a remedy for nervous impotence. Apparently it is supposed to act in much the same way as Yohimbine, and is prescribed in the form of pills. One of my patients who took the drug for three weeks said that for ten days there was no appreciable effect. Then desire increased, but the impotence remained as before.

Spermin or orchitic extract. Under the name of Sperminum-Poehl an organic compound prepared by Professor Poehl of Petersburg is recommended for the treatment of nervous impotence as well as of many other diseases. It is given both internally and by injection. Of spermin essence the dose is 30 drops 3 times a day in Vichy water or milk. I have not prescribed this preparation.

Salix Nigra, unlike the others, is a sexual sedative which has been used as a substitute for bromides and also in combination with them for the control of too frequent seminal emissions, as well as in cases of prostatic irritation and urethral neuralgia. It is prescribed in the form of a fluid extract in doses of from half a drachm to a drachm three times a day. My own experience of this drug is that sometimes it seems to be of use and sometimes inert.

Suspension.—Some years ago, when the suspension treatment of locomotor ataxy was in vogue, similar treatment was employed for the relief of impotence, and in some cases favourable results were reported. I have no personal experience of it.

Hypnotic suggestion has also been used with success in some cases of masturbation and of sexual perversion. But of this

again I cannot speak from my own experience.

Marriage.—Before leaving the subject of general treatment a word must be said about the important and often difficult question of marriage in cases of sexual disorder.

It is hardly necessary to point out that marriage is never to be recommended solely as a curative measure. In all cases when such a step is contemplated, the patient ought to have reasons for marriage other than those connected with his own physical benefit, and he ought not only to have sexual desire, but care should be taken to ascertain that the desire is for natural intercourse and not for some kind of abnormal gratification. In cases of impotence the doctor also ought to be satisfied that there is no reason why adequate sexual power should not be recovered under the influence of married life.

In these circumstances it may be said, as a general rule, that when the patient is under forty, when there is no organic disease, and when the nervous symptoms are slight, marriage will be beneficial, or at least is not contra-indicated. In other circumstances caution must be exercised and each case must be judged by itself, but in coming to a conclusion of the whole matter the question of the happiness of the future wife ought always to be considered as well as the probable effect of marriage on the man himself.

The respective *ages* of the man and woman who propose to marry is another point that should not be lost sight of. On the whole, the most favourable age for marriage as regards both parents and offspring appears to be from 20 to 25 in women and from 25 to 30 in men. A sexual hypochondriac as a rule had better not marry. He will be only

too likely to make his wife unhappy as well as himself. In any case in which marriage is allowed the man ought always to be warned against excess, for many of those who have previously been deficient in power are prone to indulge immoderately when they regain it. Other things being equal and speaking generally, it may be said that marriage is more likely to be a success when the sexual trouble has been due to natural than to artificial causes, because in the former case the psychical element is usually so much less in evidence.

CHAPTER VI.

LOCAL TREATMENT.

Baths and Bathing.—Besides the usual morning bath including of course thorough cleansing of the genital organs which should be taken daily by all men, local bathing both hot and cold is a valuable aid to treatment in many cases of impotence, especially those in which the prostate is affected and in which there is undue frequency of seminal emissions.

Cold bathing as a rule should not be used at night, because the subsequent reaction seems to increase the tendency to erection and emission. In the morning however cold or tepid bathing, followed by brisk rubbing with a rough towel, is always beneficial.

Whenever the prostate is congested hot bathing is one of the best means of relieving the feeling of fulness, weight, and pain which is so often complained of. The patient may sit in a hot hip-bath (100° to 110° F.) for a length of time varying from 5 to 15 minutes, or if this is impracticable, he may sit on a bath sponge placed in an ordinary washing basin containing the hot water. *Enemata*, hot at night and cold in the morning, are useful in similar cases.

Douches are in some cases more effective than simple bathing, and when erectile power is feeble hot and cold douches used alternately sometimes have a better effect than either alone. The douches should be applied with a certain amount of force to the sacral, anal, and perineal regions. They may be taken at a bathing-place, or they may be given at home by means of rubber tubing

attached to ordinary water taps, care of course being taken that the water is not hot enough to scald the patient.

Suppositories.—A convenient method of applying remedies in some affections of the prostate and neighbouring parts is by means of suppositories. Among the drugs that may be used in this way are Morphia, Belladonna, Cocaine, Mercury, Iodine and Ichthyol, in combination with Oil of Theobroma.

Counter irritation is often useful in prostatic irritation and may be applied in several ways, one of the most convenient being that recommended by Sir Henry Thompson, which consists in making a small blister every four or five days on either side of the raphé of the perineum by means of Liquor Epispasticus, and continuing the applications for a period of from four to six weeks. The advantage of this plan is that the patient need

not lie up while carrying it out. But it does not always succeed, in which case a larger surface must be acted on, either by blistering fluid or the strong solution of Iodine, and the patient confined to bed or couch until the soreness has passed off.

Massage.—For the treatment of chronic affections of the prostate and seminal vesicles, massage per rectum has been largely resorted to of late years, though much more in America and on the Continent than in this country. As regards the seminal vesicles it must be acknowledged that this unpleasant manipulation, always supposing that the operator's finger is long enough and strong enough to reach them effectually, seems to be the only available means, short of operation, of acting upon them directly. Feleki has invented an instrument to take the place of the finger. In practising massage care

must be taken not to use force, especially in gonorrhœal cases. For if septic matter be present there is always a risk of forcing it along the vas deferens and thus setting up epididymitis. In some over-sensitive persons there is risk also of provoking orgasm and ejaculation.

It is usually recommended that the massage be repeated once, twice, or thrice a week, but the patient's own feelings are the best guide as to how often it should be done, or whether it should be continued or left off altogether.

Electricity in some form is recommended by most authors in the treatment of Impotence. I myself have employed only the induced current, and have found it useful in some cases when erection is feeble and ejaculation wanting in force, especially when apparently due to want of muscular power.

Stimulation of the skin by means of the wire brush or other dry electrode is also of value in the treatment of coldness, relaxation and deficient sensation of the penis, scrotum and adjoining parts.

The treatment of any affection of the external organs which seems to be setting up reflex irritation should never be neglected.

Balano-Posthitis and Phimosis.—Balano-posthitis should be treated by washing twice a day, drying, and the application of a powder of boric acid and kaolin or talc. A strip of boric lint or gauze should also be placed in the furrow behind the corona. When inflammation prevents retraction of the prepuce, in certain cases of glycosuria for example, the preputial cavity should be syringed out with a boric acid and spirit lotion, and a piece of boric lint or wool kept

in the orifice to absorb the remains of the irritating urine.

At some bygone period of man's existence a highly sensitive state of the parts was probably necessary for the proper performance of the sexual act. In the altered circumstances of the present day, however, the aim of the uncircumcised should be to convert the mucous surfaces as far as may be into the skin-like condition found in those who have been circumcised in infancy.

When without actual balanoposthitis the mucous membrane is moist and tender, as it is when the glans is habitually covered by the prepuce, it should be hardened and so rendered less sensitive. The easiest way of doing this is by keeping the prepuce behind the corona, and if there is a tendency for it to slip forward, a narrow strip of lint or gauze may be tied loosely round the furrow.

In addition to this, or when for any reason it cannot be carried out, the dusting powder already mentioned, or if that is insufficient a spirit lotion to which Hazeline, Tannin or Sulphate of Zinc may be added with advantage, should be applied once or twice a day. If a mucous surface bears the application of rectified spirit without discomfort it may probably be excluded as a source of reflex irritation.

The prepuce ought always to be freely retractable, not only in the flaccid state but also during erection, and if it is not it ought to be made so, or removed altogether.

In *Phimosis*, when the prepuce is not very long or narrow and if there are no adhesions or cicatricial tissue dilatation sometimes succeeds, as it does also when retraction though easy in the flaccid state is difficult during erection. When the prepuce is both long

and narrow or if there are firm adhesions or cicatricial tissue, circumcision is advisable. But it may be as well to add that operative treatment should not be resorted to as a mere matter of routine in sexual disorders. For whoever expects circumcision alone to cure either masturbation or impotence will surely be not rarely disappointed.

Though the preceding remarks refer chiefly to the periods of adolescence and adult life, something of what has been said applies also to children, in whom genital irritation is so likely to lead to masturbation. The condition of the prepuce especially should be looked to in childhood, not only on account of trouble at the time, but because repeated attacks of balano-posthitis gradually set up an unhealthy cicatricial condition of the mucous membrane rendering it liable to crack and tear, and thus open the door to

possible venereal infection at a later period of life. The irregular pits and crannies also which are the result of partial adhesions between the prepuce and glans, by forming foci for the lodgment of the natural secretion as well as of infectious matter from without, eventually become a potential source of irritation and of danger.

With regard to local affections such as *Herpes*, *Eczema*, and other skin diseases of the genital or neighbouring regions, and rectal troubles such as *Fissure*, *Piles* and *Ascarides*, it is only necessary to say that they should be treated as in other cases. The important point is not to overlook them.

If a *narrow Meatus*, congenital or acquired, is judged to be the cause of obstruction or reflex irritation it should be enlarged by incision.

Urethral Treatment.—It is not always

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easy to say offhand whether this is or is not likely to be beneficial in sexual disorders. It need hardly be pointed out that the days of indiscriminate urethral instrumentation have or ought to have gone by, and that now-a-days anyone who passes an instrument into the urethra, and especially through its deeper portion, ought to have a good reason for doing so. No doubt most neurotic patients with primary impotence accompanied by frequent emissions or premature ejaculation have an over-sensitive urethra, but it does not necessarily follow that urethral treatment is required. In deciding the question all the circumstances of each case should be carefully considered.

As a roughly general rule it may be said that if the patient has never had urethritis, if the urine is clear and free from shreds, and if examination per rectum gives no

definite indication, the urethra should be left alone until other measures have been tried and found wanting. On the other hand, if he has had gonorrhœa, if the history and symptoms suggest stricture or if the urine contains shreds, examination of the urethra is usually advisable.

In examining the urethra for diagnostic purposes the best instrument is one with a slender shaft and a bullet- or acorn-shaped end (*bougie à boule*) beginning with a size as large as the meatus will admit without force. By flexible instruments of this kind the site of stricture or of tender spots in the urethra can be ascertained much more accurately than with other forms of bougie.

The calibre and general condition of the urethra having been thus determined, the next step will depend on what has been found. If there are localised tender spots in

the anterior urethra they should be inspected with the urethroscope. Inflamed or granular patches may be treated by the passing of sounds and the application of a solution of nitrate of silver varying in strength according to the case. For chronic patches with thickening of the submucous tissues a mixture of equal parts of strong solution of Iodine and glycerine, applied by means of a mop through the urethroscope is often useful. If stricture be present it must of course be dilated or otherwise dealt with.

Some cases of hyperæsthesia, chronic congestion and inflammation of the deep urethra, and chronic prostatitis are greatly benefited by the passing of instruments, and it is sometimes advised that only large metal sounds should be used in such cases. It is much better however to begin with flexible bougies, and thus gradually accustom the urethra to

the presence of instruments before passing on to the steel sound; and when the urethra is very sensitive the patient may be spared much discomfort and alarm by beginning with quite small olivary or *coudé* instruments as flexible as possible. The size should be gradually increased up to the largest the meatus will admit, and if it be contracted it may be necessary to enlarge it. At first the instrument should be removed at once, but as tolerance increases it may be retained for a gradually increasing length of time up to ten or fifteen minutes according to the effect. As in the case of rectal massage, so also in that of urethral instrumentation, the patient's feelings will often be the best guide as to whether it is likely to be useful or not. If pain and tenderness diminish, if the sense of weight and dragging in the perinæum is relieved, and if the patient feels more com-

fortable generally, the treatment should be continued once, twice, or three times a week according to the case. But if the symptoms increase or do not improve, the instruments should be left off, for a time at any rate.

When sounds have relieved but have failed to cure, the Psychrophor, introduced by Winternitz, is sometimes useful. This is a metal instrument resembling a double-current catheter but without any opening at its vesical end. By means of rubber tubing attached to the two branches into which the distal end is divided, water of any required temperature can be kept circulating through it, and thus the effects of heat or cold combined with those of pressure can be obtained. Cold water as it comes from the ordinary tap is often used, but if the patient finds this too cold, water at a higher temperature, say from 65° to 70° F., may be used to begin

with. The duration of each application varies from 5 to 15 minutes.

When erection is feeble and when sensation in the deep urethra is also impaired heat sometimes acts better than cold, in which case the temperature may be from 100° F. upwards according to circumstances.

When other means fail, the application of astringents or mild caustics to the posterior urethra may be considered.

Solutions of some salt of Zinc or Iron or other astringents are sometimes used, but in many cases a solution of nitrate of silver varying in strength from 1 grain to 20 grains to the ounce answers best. Whichever fluid is decided on is injected into the posterior urethra by means of either a syringe attached to the end of a small soft catheter, or by Guyon's well known apparatus, or by Ultzmann's "*urethraltropfer*," which consists of

a graduated syringe attached to a small silver catheter with a short curve and a capillary bore extending to the tip. This last-named instrument in its original form is inconveniently short for the posterior urethra, and as a rule a flexible instrument is preferable. The quantity of fluid to be instilled will vary from 5 to 30 minims, the stronger the solution the smaller the quantity. The applications are repeated at intervals of three days to a week or longer according to the effect produced.

Instead of injections Ultzmann recommends in some cases the use of astringents in the form of urethral suppositories containing tannin or nitrate of silver with oil of theobroma. These are introduced into the posterior urethra by means of Dittel's *porte-remède*.

Lallemand's *porte-caustique* for the appli-

cation of solid nitrate of silver is an undesirable instrument which has itself been accused of causing sterility by occluding the orifices of the ejaculatory ducts. It is now seldom or never used.

The cases in which urethral applications are required are mostly of gonorrhœal origin, and for further information on the treatment of chronic gonorrhœa and its complications as well as the antiseptic precautions to be observed in the use of urethral instruments, the reader is referred to some recent work on genito-urinary surgery.

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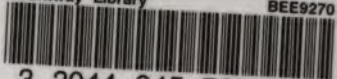
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